AFV modeller

15
ISSUE
March / April 2004
Visual Bi-monthly
featuring the best
Scale AFV Modelling
£6.00 UK

Inside Job

LEE LLOYD'S AMAZING TIGER 1

AFV Modeller is published Bimonthly by
AFV Modeller ltd
176 Newbridge Street
Newcastle upon Tyne
NE1 2TE
Tel: 0191 209 1107
Fax: 0191 209 2002
email: info@afvmodeller.com
Editor and Designer: David Parker
Deputy Editor: Donald Campbell
Sales Director: Keith Smith

USA Subscription Agent:
Wise Owl Worldwide Publications
5150 Candlewood St., Suite1
Lakewood CA 90712-1900
USA.
Tel: 562-461-7574
Fax: 562-461-7212
email: info@wiseowlmagazines.com
website: www.wiseowlmagazines.com.

AFV Modeller welcomes contributions from interested parties, but cannot accept any responsibility for unsolicited material.
The contents of this publication including all articles, drawings and photographs originated by AFV Modeller ltd become the publishers copyright under copyright law. Reproduction in any form requires the written consent of the publisher. Whilst every care is taken to avoid mistakes AFV Modeller ltd. cannot be liable in any way for errors or ommissions.

CONTENTS

2 **Inside Job**
We lift the lid on Lee Lloyd's incredibly detailed Tiger interior

12 **Mistreated**
Ulf Andersson blows up more soviet armour, this time it's a T34 that gets the treatment

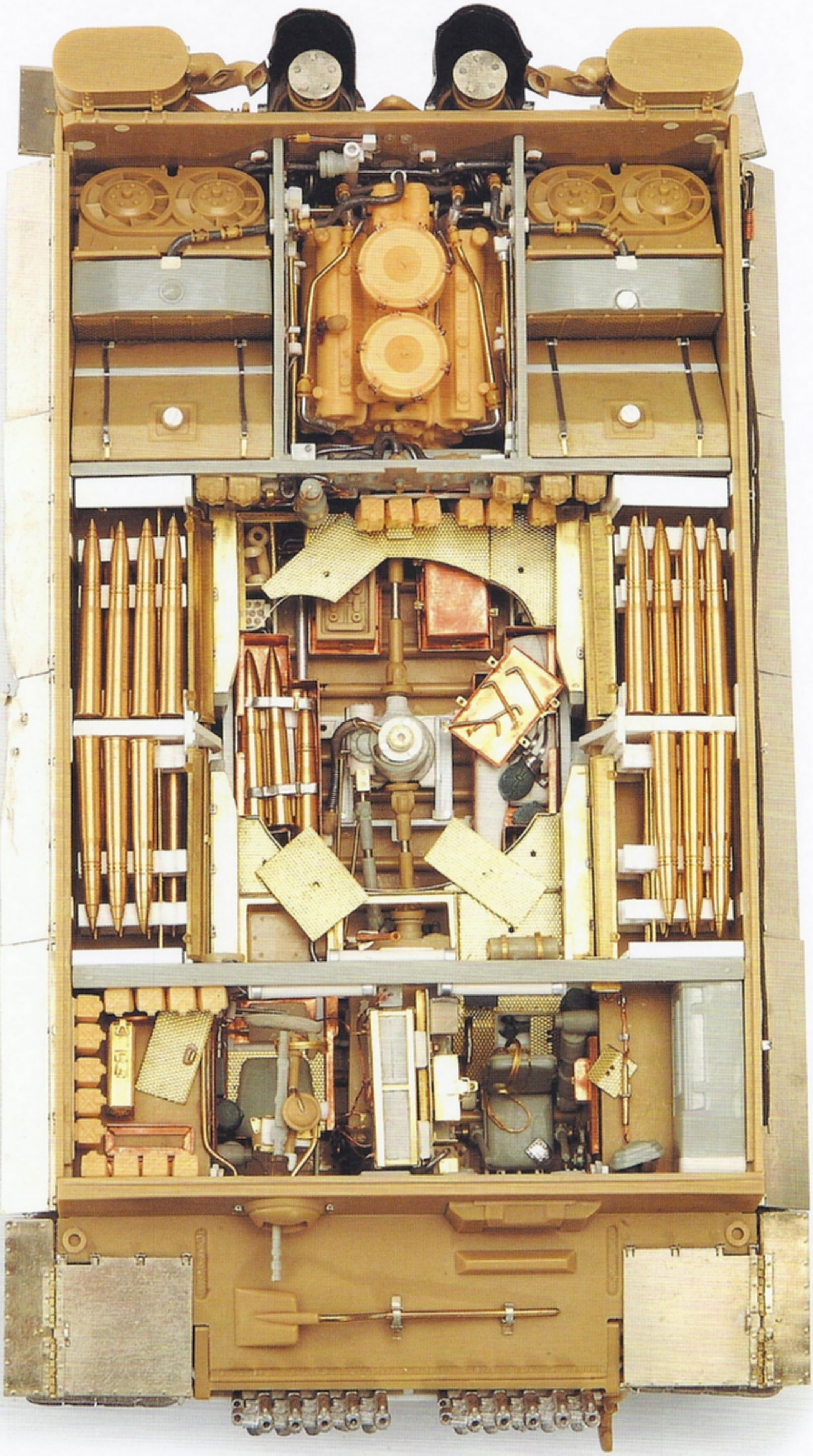
24 **101st Dalmation**
Gold Medal winner at Euro Militaire, Marijn Van Gils explains how he built his latest Diorama

34 **Modelling the Panzer IV Ausf E Part 1**
Tom Cockle shows how to build an accurate 'E'

45 **Xtreme Detail**
The BTR70

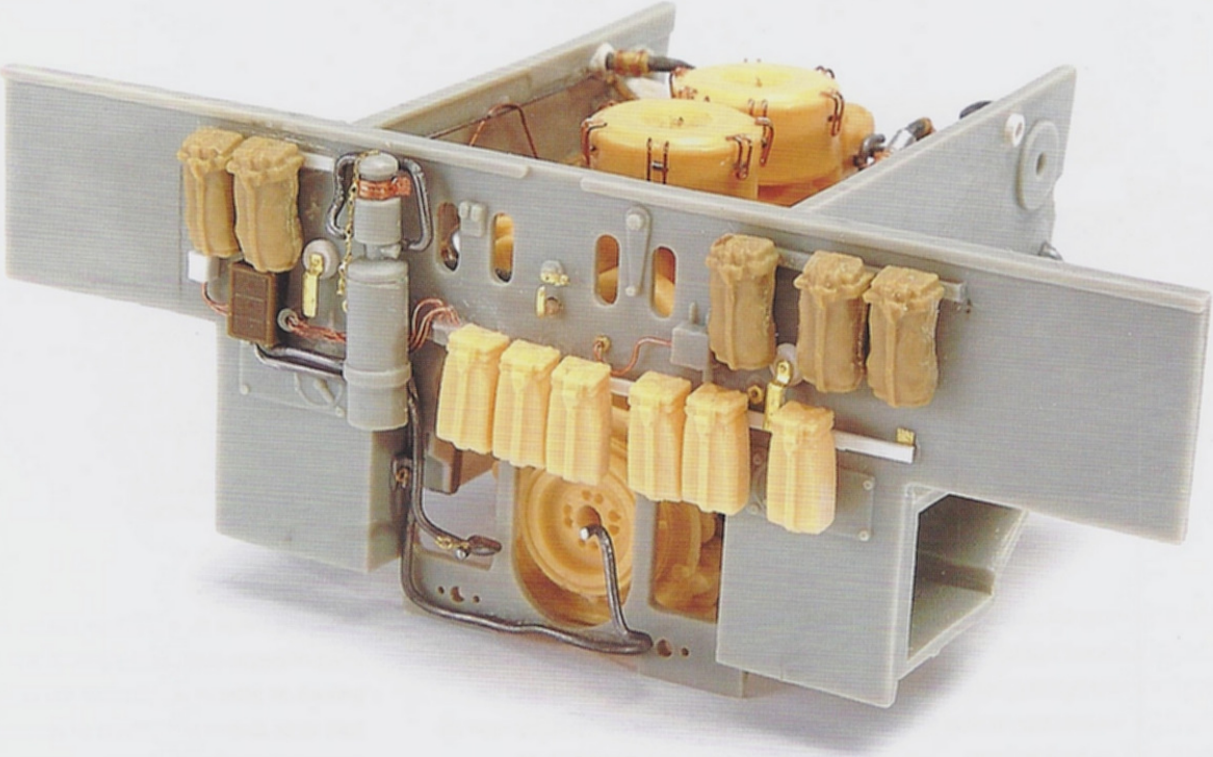
50 **Keeping Track**
More new releases

54 **Building the Bilstein**
Darren Thompson, who knows a bit about Bilstein cranes, builds the Tiger Model designs conversion kit



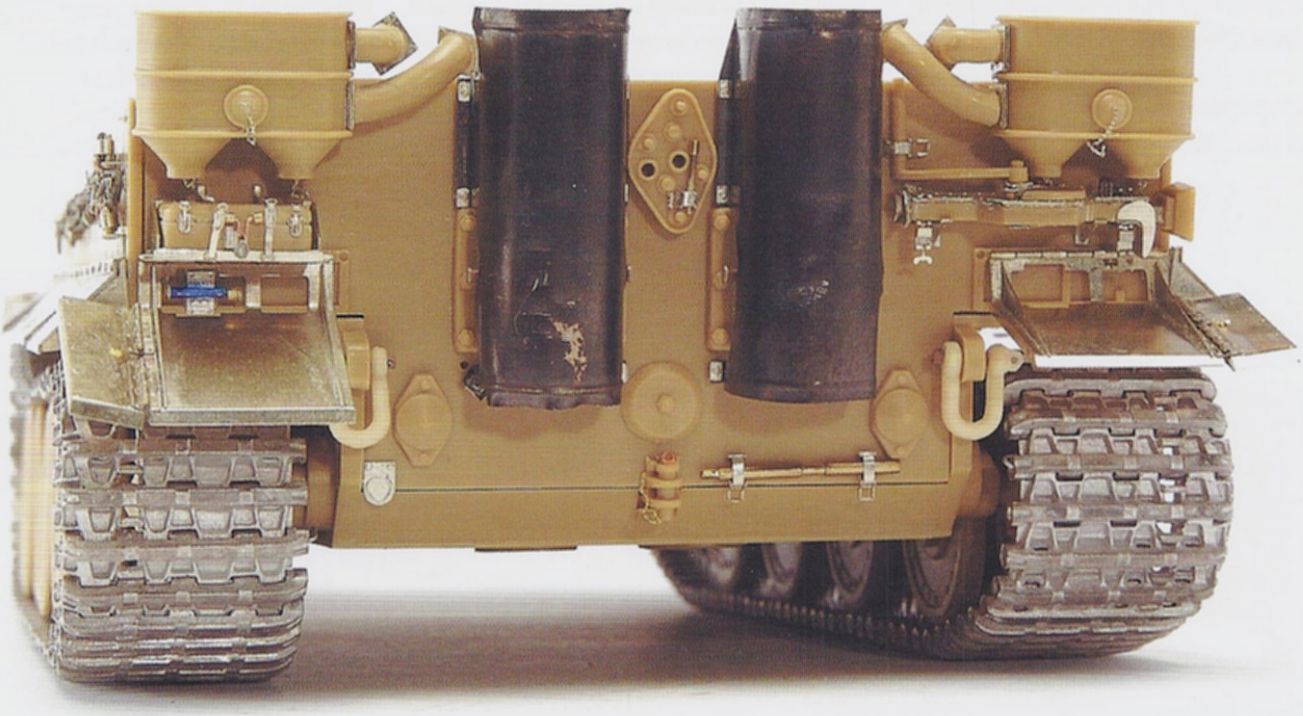
Looking down into the completed hull with its variety of materials and finishes its not hard to see why it remains unpainted

The engine pack assembly showing the details added to the fighting compartment wall.

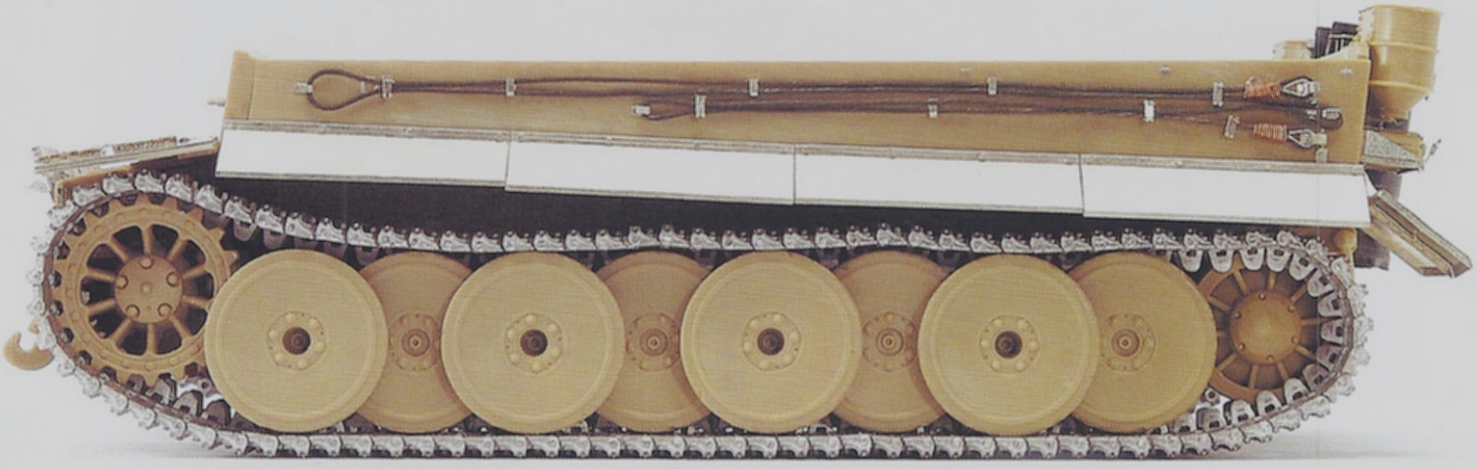


Inside Job

Lee Lloyd shares the thinking behind his amazing Tiger 1 hull



The completed hull rear with the Aber detail set fitted. Note the rear light made from clear rod tinted with a felt pen!

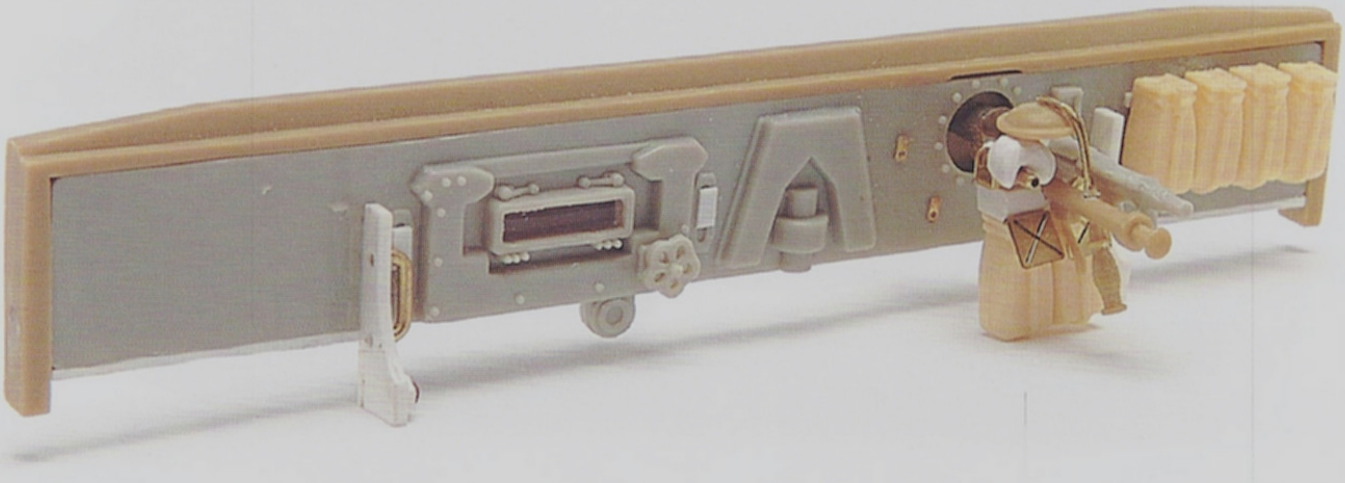


After a hiatus of nearly 25 years I have returned to my boyhood hobby; that of modelling armored fighting vehicles. It was a chance conversation with a friend in a local model shop that led me to wonder what kinds of models were being made today. I then spent about two months surfing the Internet where I discovered some wondrous things; modern highly detailed plastic injection kits, resin conversions, metal gun barrels, amazing photo-etch detail sets and, perhaps most interestingly to myself, working metal tracks! I was hooked, there was no turning back and almost at the same time my wife bought for me the Academy mid-production Tiger 1 with a detailed interior.

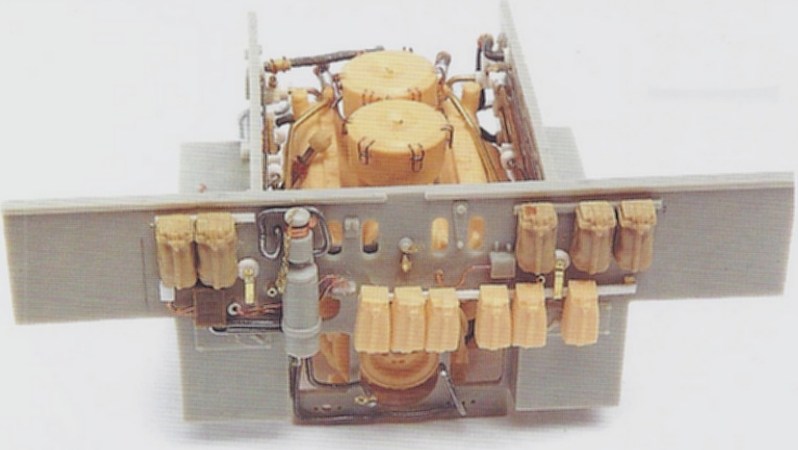
And so began this project which to date has taken over seventeen months and has only seen the creation of the kit hull, without deck and turret. As a child I had only modelled in 72nd scale and so working in 35th was completely new to me. Right from the outset I was determined that I would do as good a job as possible and I realised that quite a bit of research would be required. What I will therefore try to describe in this article is more of the thought processes that went into this project rather than the actual build itself.

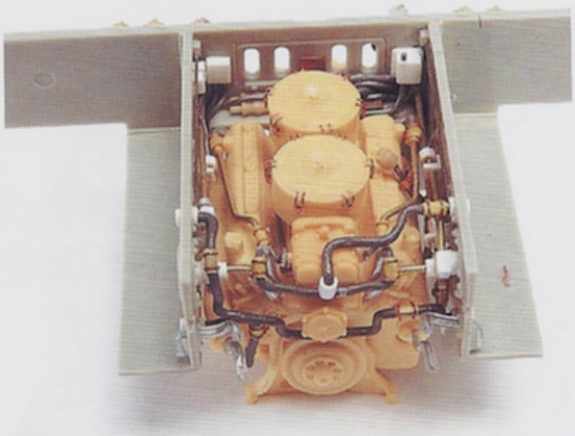
Where to Start?

In the first case I was unaware whether or not to actually build the interior but the one thing I did want to do was to build the engine. Unfortunately the kit engine parts are terrible and so I replaced them with a Tank Workshop item. This engine was amazing I was totally taken aback by the level of detail and being one of the first pieces of after-market resin replacements I had ever seen I wondered what else I could source for the interior of the kit and I decided I would make all the interior and try to build the tank in such a way that would display all of the work. About this time I also discovered a bibliography of books on the Tiger family of tanks on the excellent Missing-Lynx website. I then spent the next four months planning out what I needed to do in order to create as detailed as possible a replica of this vehicle. I compiled a very extensive list of after-market products that existed for 1/35th scale Tiger tanks. Regarding reference books I went on a spending spree, in those four months I purchased over £500 of books on Tigers, concentrating on those that were more



The completed glacis plate interior with driver's visor and hull machine gun



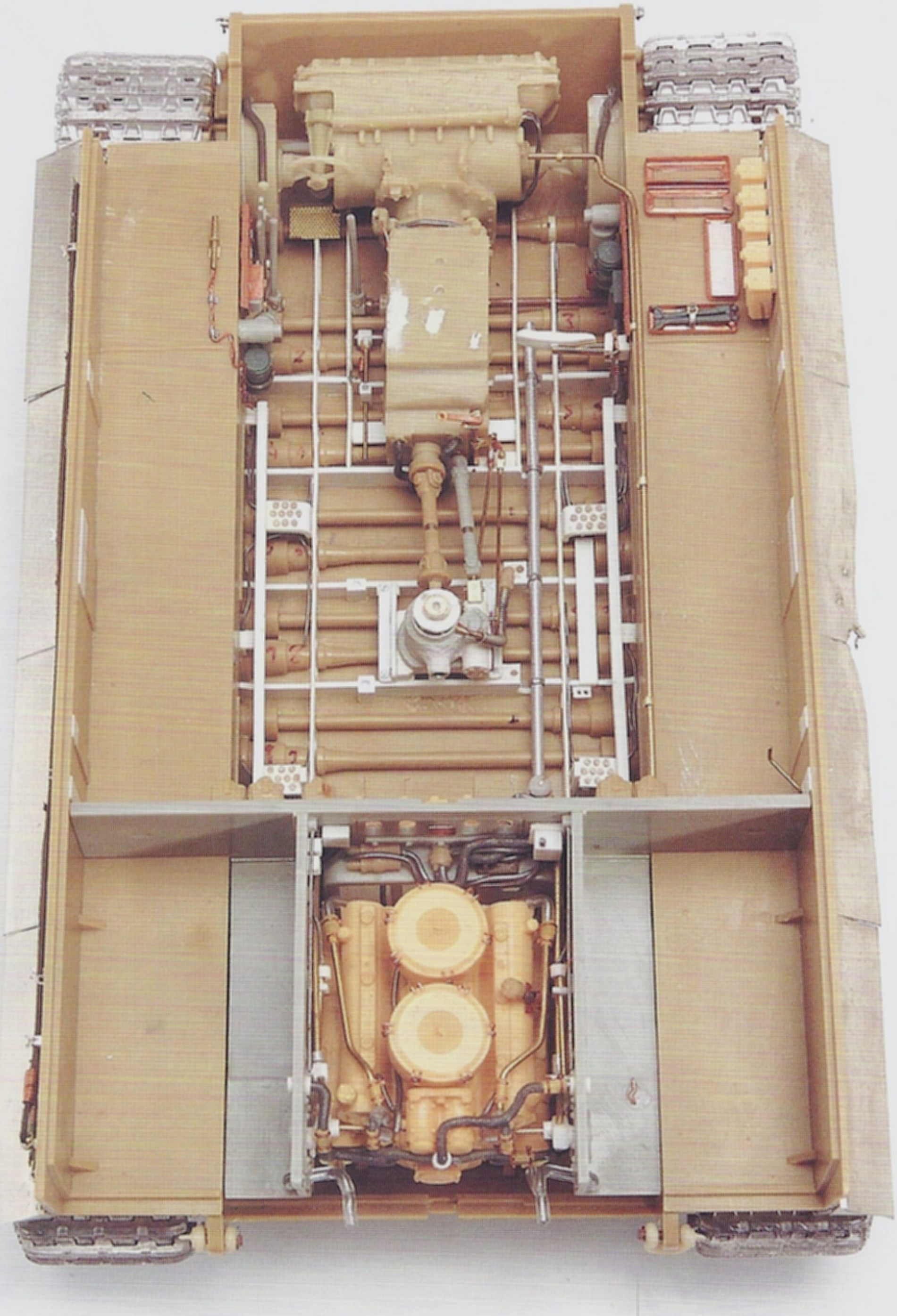


related to the technical aspects of the tank as opposed to unit histories. I also trawled the Internet for information and photographs. I have to mention the excellent website Tiger1.info run by David Byrden on which there is an excellent series of exploded view and scale diagrams of the Tiger 1 tank. To date I have a Tiger file that is about 3" thick full of information I collected from the net. Thus armed I set to work.

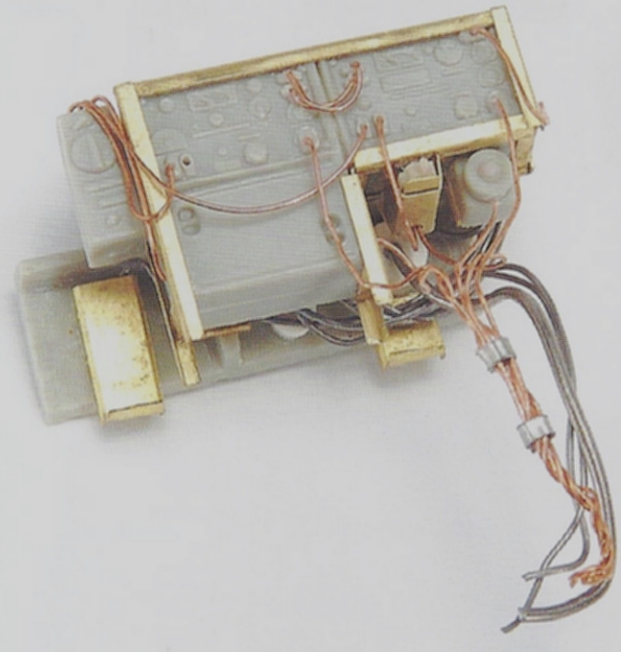
The Construction

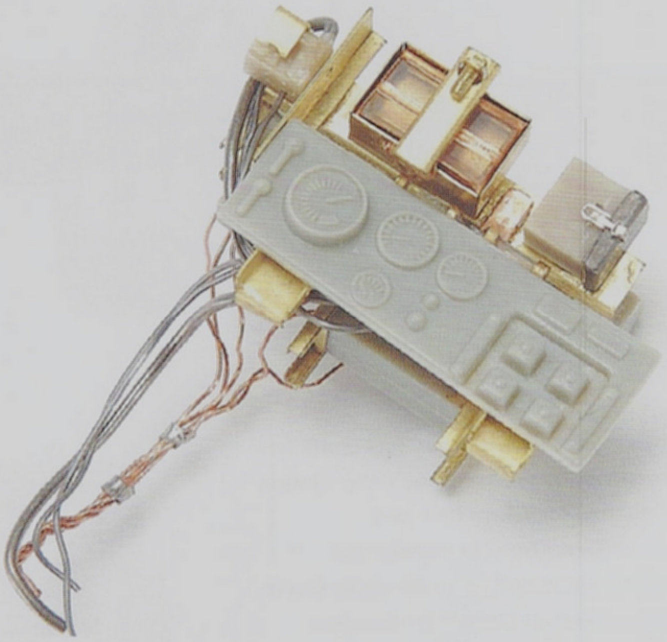
I was quite certain from the start that the entire project would have to be built as a series of sub-assemblies that would have to be layered together starting from the ground up. Obviously the hull floor was the starting point for this work and it was here that a great deal of the initial detailing was implemented that essentially set the level that I was aiming for. I did realise early on that as subsequent work was carried out those deep layers would often be obscured by later work. This was not a problem as part of the whole project was to see just how much of the physical content I could replicate and get to fit/connect to the surrounding structures.

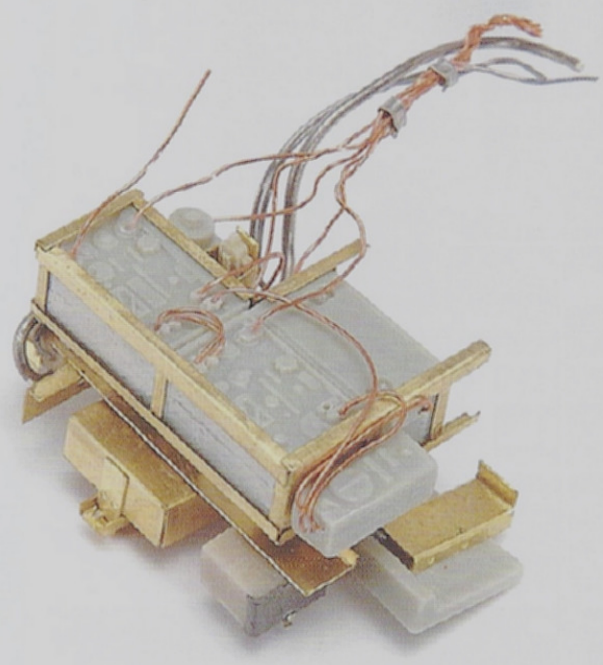
The most significant point of interest was a complete implementation of the torsion bar lubrication system. This was a very interesting feature to model which of course is almost completely hidden from view by floor panels, ammunition bins etc.

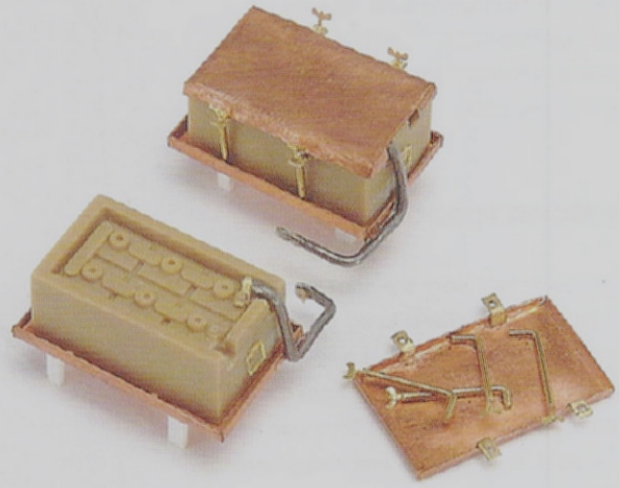


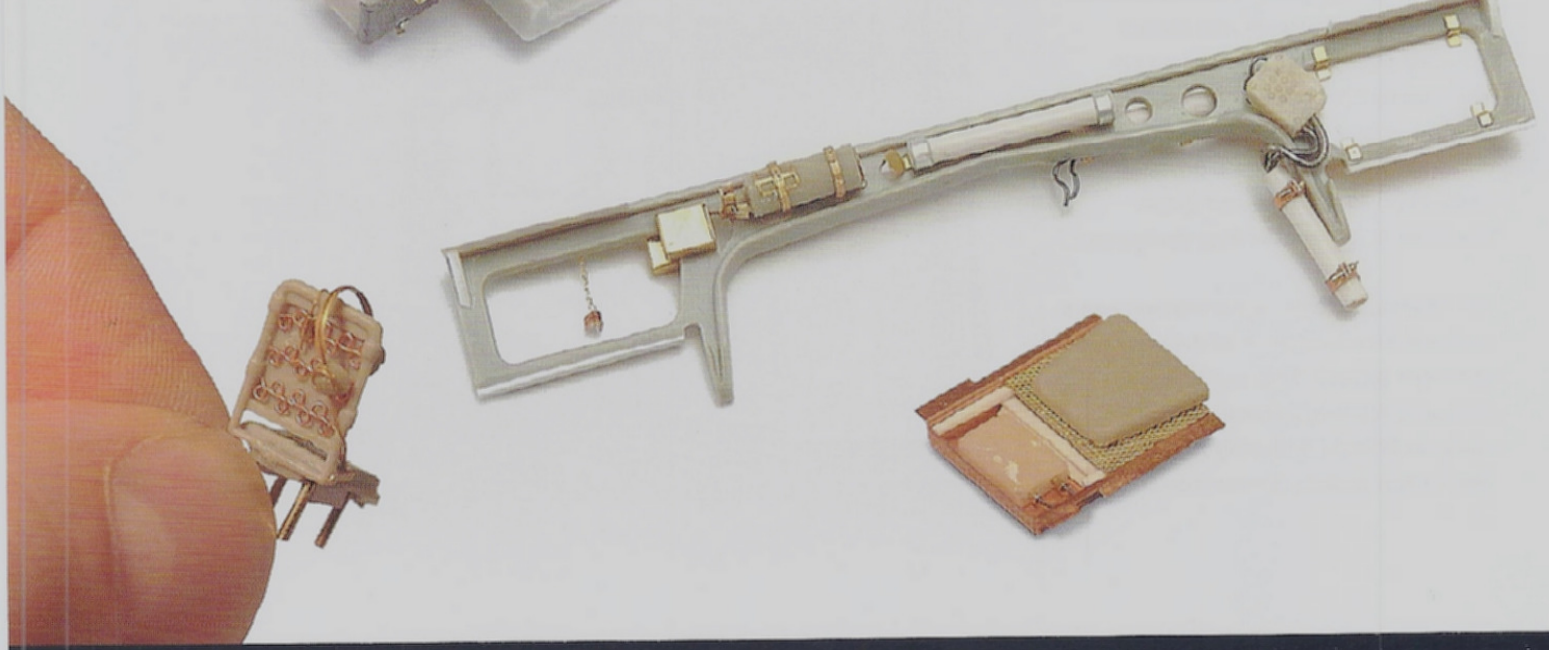
The stripped down hull with engine pack installed and the suspension system exposed



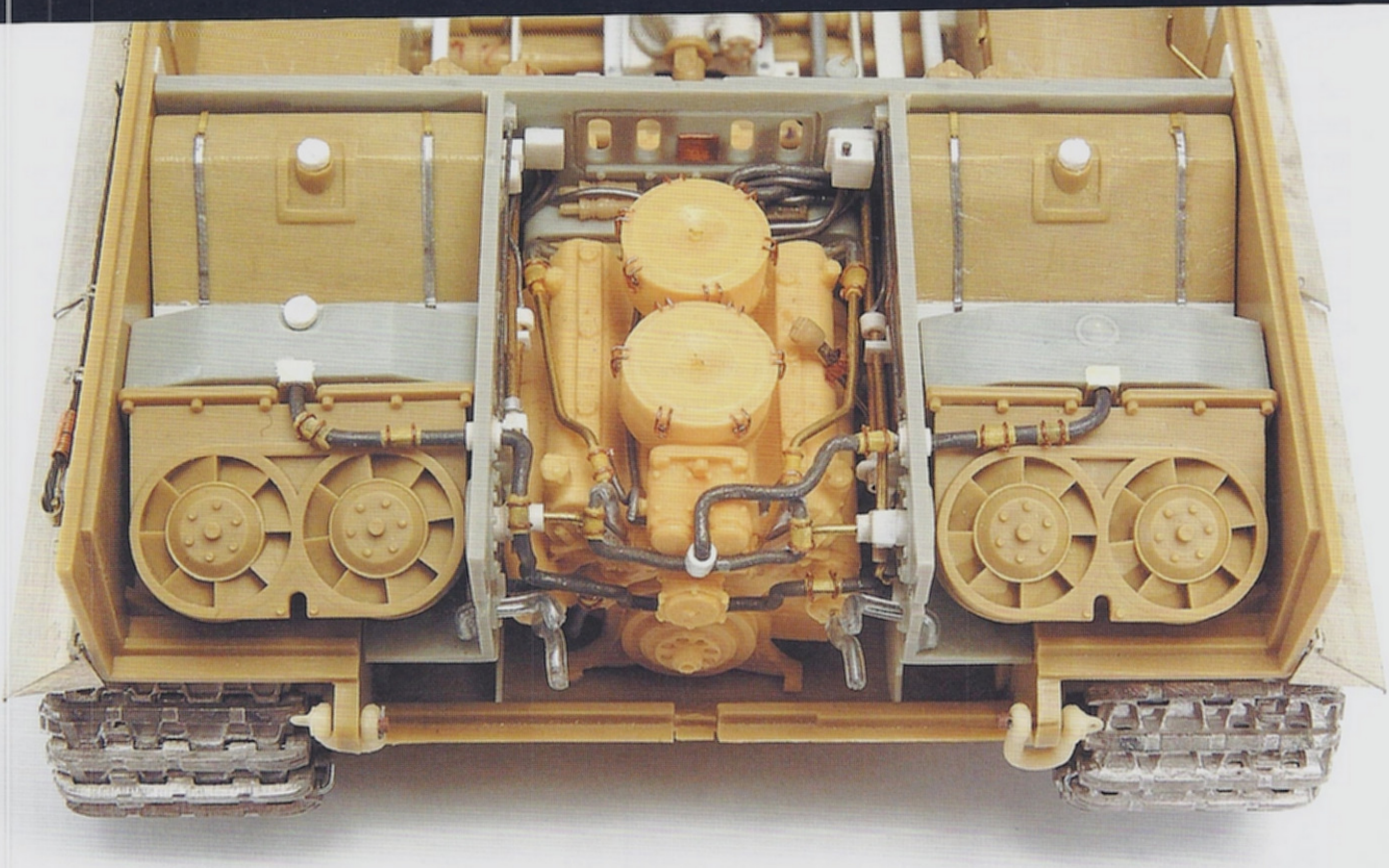








The cooling system installed in the engine bay, notice the miniature hose connector clips

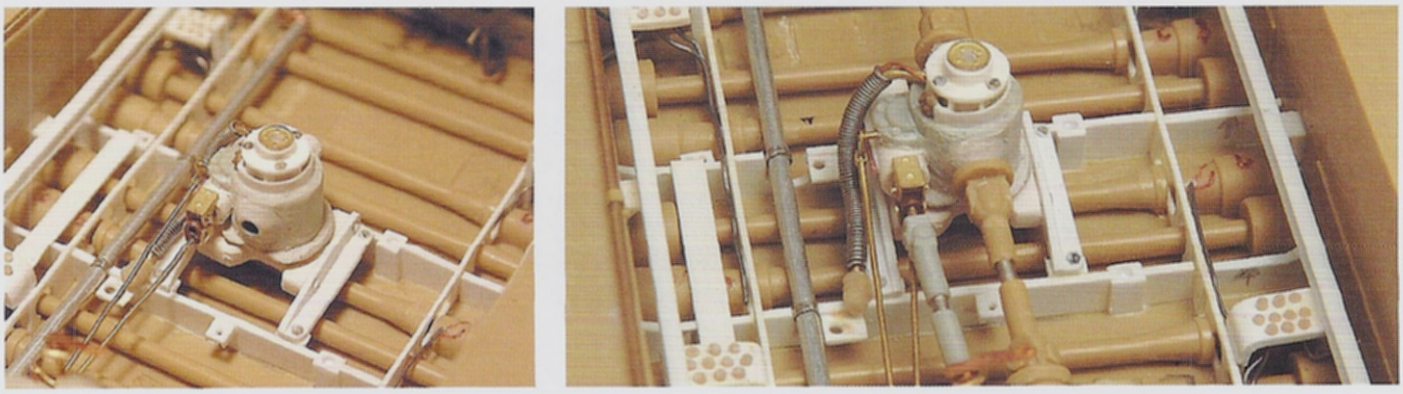


To this day I still do not know much about unit histories of Tigers but I can tell you which grease nipple on a specified lubrication post would be used to service a torsion bar bush! Now that to me is the fun of modelling.

Once I was satisfied that I had created everything I could on the hull floor I then began work on the engine compartment. This whole area is nicely broken down into sections by the Academy kit parts and so each could be detailed separately. I did relatively little work on the fuel tank/radiators and fan units as there was not a great deal extra to add here. The engine compartment was of course a completely different matter. I managed to source an excellent series of both the coolant system plumbing and electrical diagrams for the engine and so, where space physically permitted, I added everything I could in this area. I would say that the details I created were not as accurate as I could make them due to my not having a full set of walk around engine compartment photos. What I did have though was quite a number of partial shots of this area from different tanks and so with a mixture of extrapolation and guesswork I kitted this area out.

The next area of work to be carried out was in the main fighting compartment. I essentially built up this up in probably exactly the same way as a real vehicle would be constructed. The core units around which everything would fit at the base layer were the gearbox, the turret PTO (Power Take Off), the propshafts, battery boxes etc. I replaced the abysmal kit gearbox with Royal Models Tiger gearbox, an item that is much more accurate and was an almost perfect fit.

Under the floor of the fighting compartment, a number of odd shaped panels that sit within two frames, are a



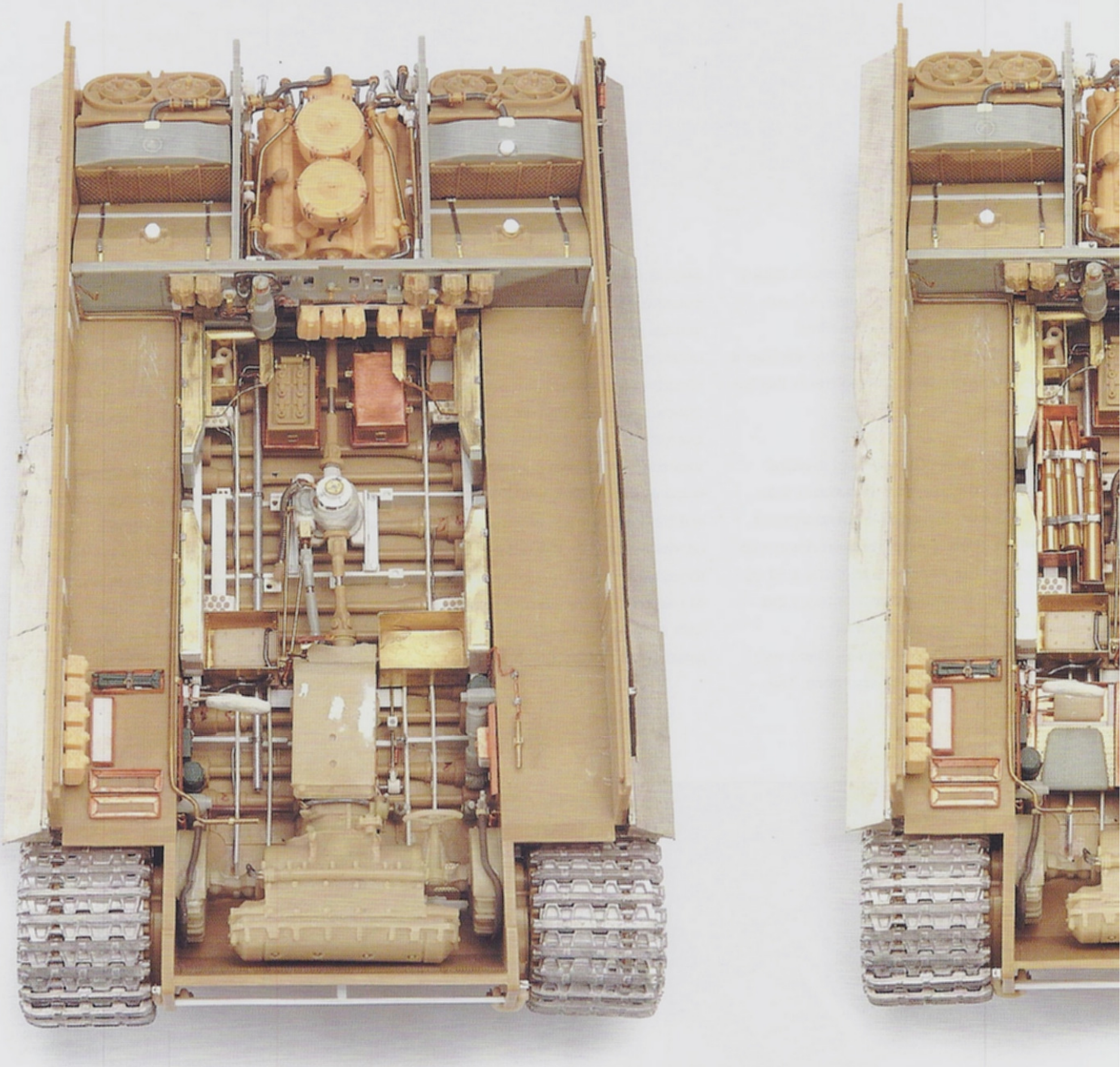
Two views of the turret power take off mounted on the hull floor.

collection of floor mounted boxes. These boxes are either ammo panniers, used for the radio transformers or just general stowage. Of interest in this area are the two odd shaped boxes to either side of the turret PTO. The box on the RHS of the tank is a six round ammo pannier whilst the one on the LHS I think is a general stowage box. From the details of these box sizes from the Tiger1.info site I created a template which I then cut out from thin sheet brass and then folded to shape. The folding of this is quite complex but can be achieved with care.

The next major item of interest in the fighting compartment to construct was the floor panel frames. These frames were made from 1mm wide lengths of brass all bent or curved into shape. Each of the individual floor panels were then cut from Aber hatched floor plate and in displaying of the kit I have left them either in place or loose to create depth by showing equipment under them.

A Change of Direction

By the time I was ready to begin construction of the radio operator and drivers station a new emphasis had begun to take hold in all the work I was doing. I became very conscious of how the look of all the materials I had used in construction all blended in well together and I began to contemplate not painting the kit. It began to be important that all parts that were constructed looked 'artistically' right. This was especially apparent the first time I fitted both sets of sponson ammunition panniers with full loads of Tamiya brass rounds. The illusion of depth generated within the hull was quite striking. From this you will gather that the construction process, in all its aspects, is very important



The hull begins to fill up as the subassemblies are fitted, firstly the batteries, underfloor stowage and ammunition stowage to me. I like to have the feeling that what I am modelling is visually appealing as well as being technically correct.

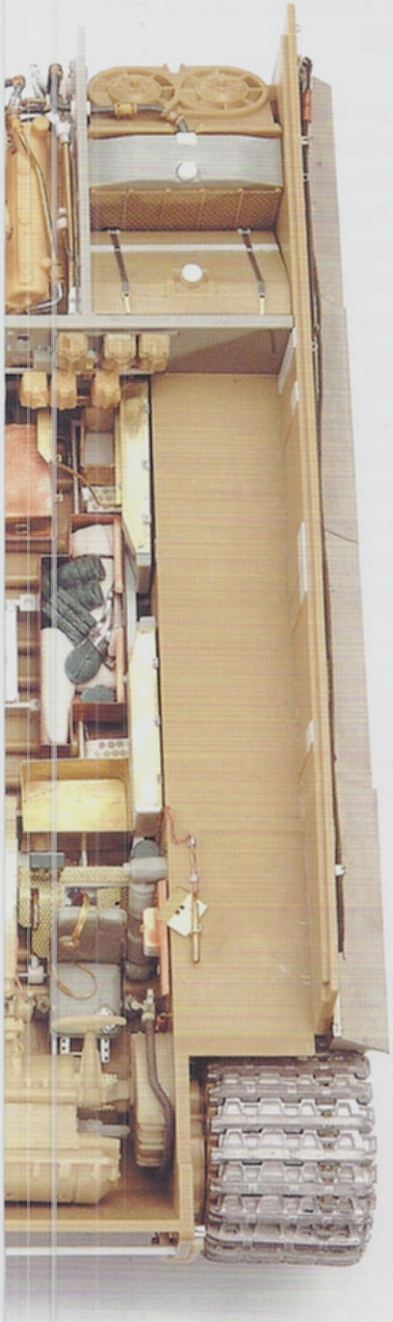
The Hull Crew Stations

The driver's station iis another area where there is a large amount of detail obscured by overlapping content. Beneath the driver's seat all the control linkages to the steering and handbrake controls were fitted. The driver's control panel is completely wired up with all the wiring being collected at the radio operator's position and running under his seat (through floor mounted conduit) to the firewall at the front of the engine compartment. Perhaps my worst attack of over detailing occurred at this point. Above the drivers seat is a box holding four spare vision blocks. I made each of these vision blocks separately, made a brass frame for each of them and then locked them all into place when I was done. Why I made them as I did I still do not know as I had no intention of ever removing them again from the stowage box once I had placed them in there!

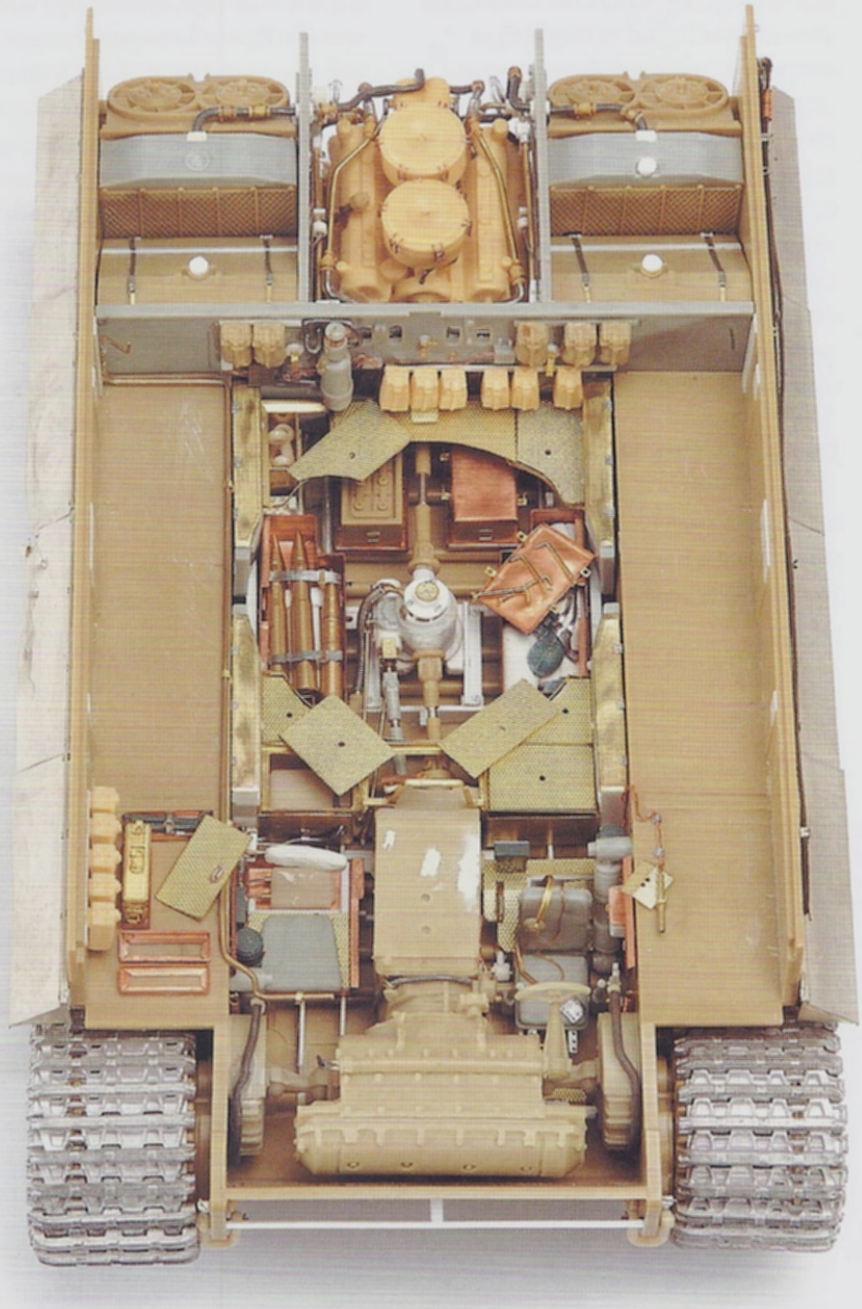
At the radio operator's station the most important feature was the radio sets. I had discovered some excellent diagrams that showed how the sender and receiver were connected together with all associated cabling to transformers, batteries etc. I replicated all this wiring where I could even including the aerial conduit that runs along the inside edge of the RHS sponson from the radio set to the RHS upper fuel tank.

The Final Hull Work

The fitting of the roof cross member and the sponson ammunition panniers were the final work on the interior. While there

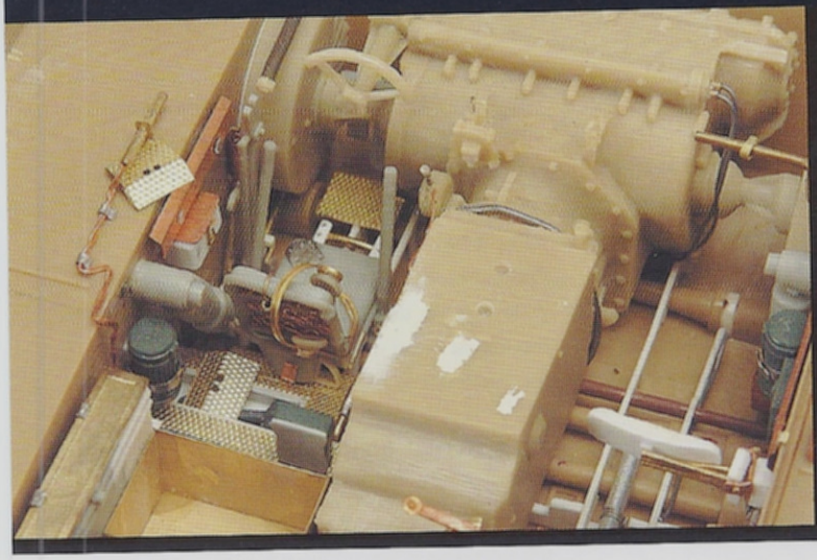


The driver and radio operator positions are added

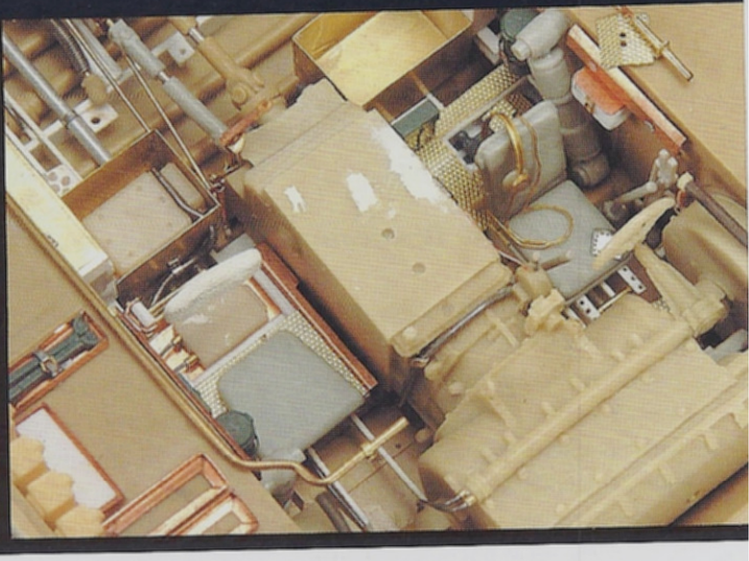


and the hull floor with its plating partially removed

The driver's position note the stowage bin behind the seat



The radio operators position before the installation of the radios



was not a great deal of work to do to the cross member it had to fit exactly in position with surrounding items whilst connecting to the radio set wiring and transformer wiring on the hull floor. The last items to be completed within the hull were the sponson ammunition panniers. Whilst I had very good diagrams on how to create these the fact that I wanted to stock them with turned brass rounds meant I had to make some compromises on how much detail I added here.

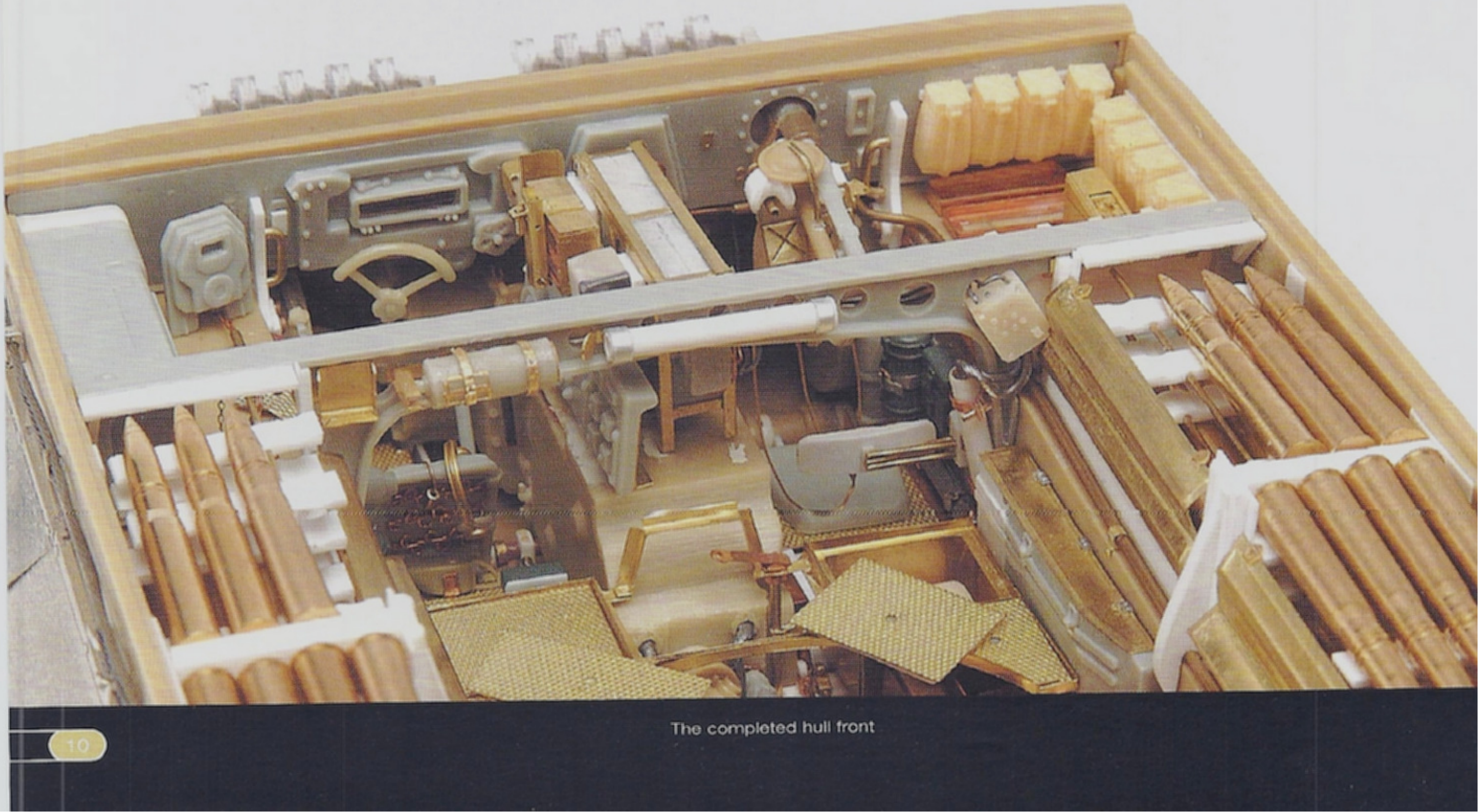
Outside the Hull

By the time I had begun to detail the exterior of the hull it was apparent that I had to decide what kind of Tiger I was actually modelling. Specifically I wanted to model a Tiger with an early hull complete with s-mine dischargers and fiefel air cleaners but using a mid-production turret with the late style commanderís cupola. Also the vehicle was not to have zimmerit if possible as I did not want to have to add this to the exterior of the tank. The possibilities I was left with were a batch of Tigers that were issued to the s.PzAbt 509 in Sept-Oct 1943.

In finishing the exterior of the hull there was nothing special done other than the employment of some Fruilmodel tracks and using photo etch from the large Tiger 1 set from Aber.

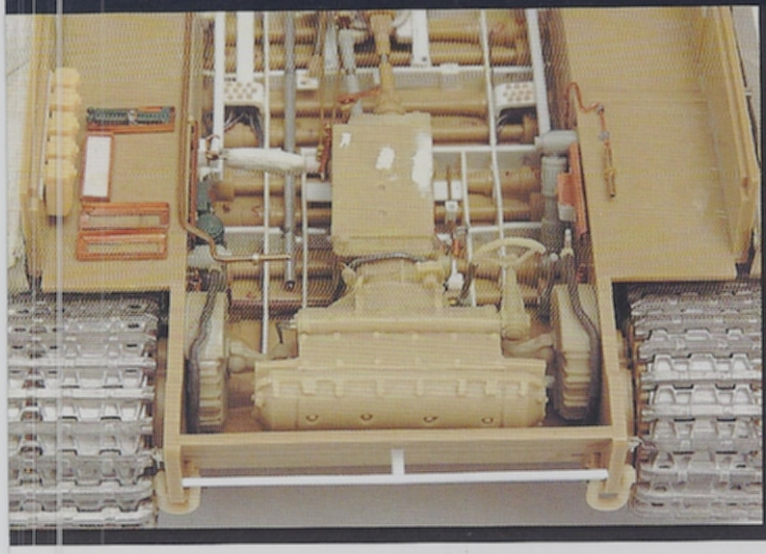
General Construction and Materials

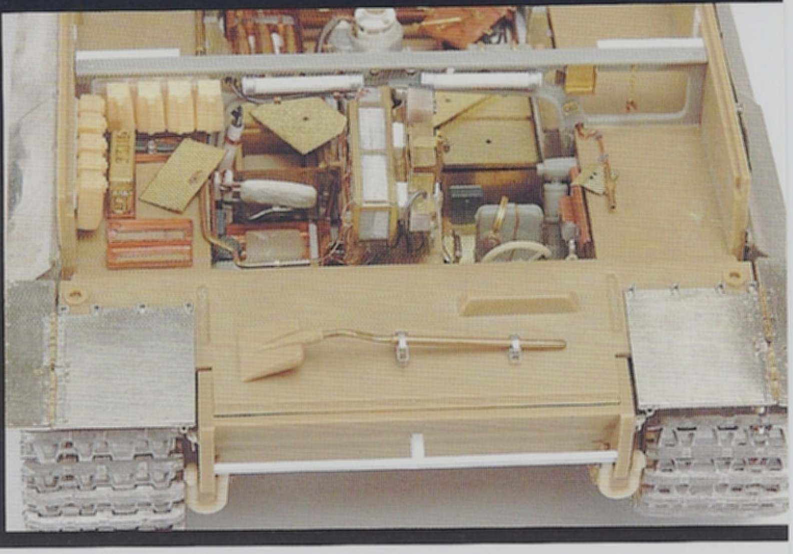
As this was the first kit I had built seriously in over two decades there was a lot I had to learn and re-learn about construction techniques. I also had no tool kit or supplies so sourcing all this material was also something I had to do. Not having any soldering experience the entire kit was completed with liquid cement or CA glue. As you can imagine I had quite a steep learning curve when it came to the assembly of certain parts, especially photo etch items, the latter also being combined with a crash course in the bending and folding of such material. For those tasks I invested in a 'Hold and Fold', which was



The completed hull front

Before and after - the hull front with the glacis plate and all subassemblies installed





ideal for this purpose. The only other specialist tool I purchased was a Helping Hands positional holder which proved invaluable for holding complex shapes.

The Finishing

For a long time I was undecided and I wavered between painting and not painting. To date the decision is not to paint as I have quite a good idea of how I want to display the entire vehicle once it is completed. This of course will depend upon the quality of the work I can produce for the turret. If I can get the latter finished with the same 'artistic' appeal as the hull then whole kit will not be painted.

If I do paint the process will not be too difficult because the whole kit still exists as a series of sub-assemblies. When I want to display the kit it can take me over half an hour to put it all together and that is if I am lucky and all the shells do not fall out of the ammo panniers!

Future Work

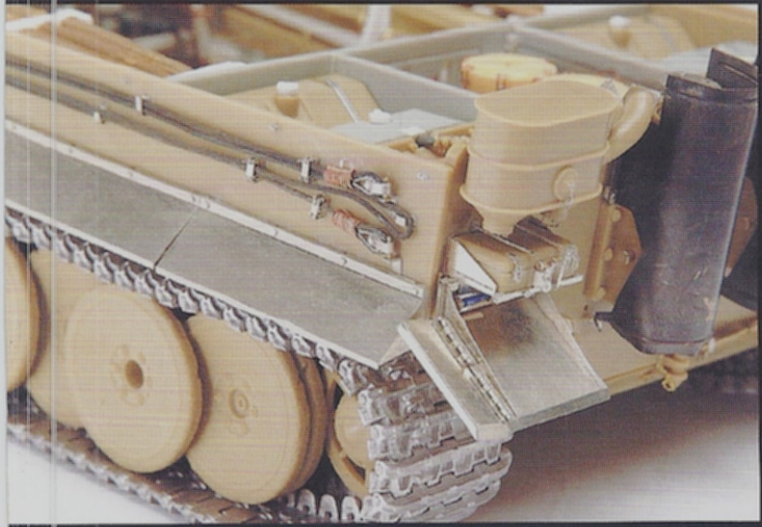
I see the remainder of the work on this kit being broken down into two main stages. The first is the hull deck and the second is the turret. The hull deck should be quite straight forward to complete. Actually I was held up here for quite some time due to not knowing how to wire up the s-mine dischargers or where their firing controls were located and it is only recently that I have uncovered this information. The most interesting part of this stage will be creating all the details under the hull roof plate.

For the turret I am undecided what to do here. I would prefer to use the kit parts as the basis for development as it would be artistically in keeping with the work on the hull. However though there have been a number of new releases onto the market that could replace this and that have a true asymmetrical aspect. Do I go for an artful or a correct look? As yet I have not decided.

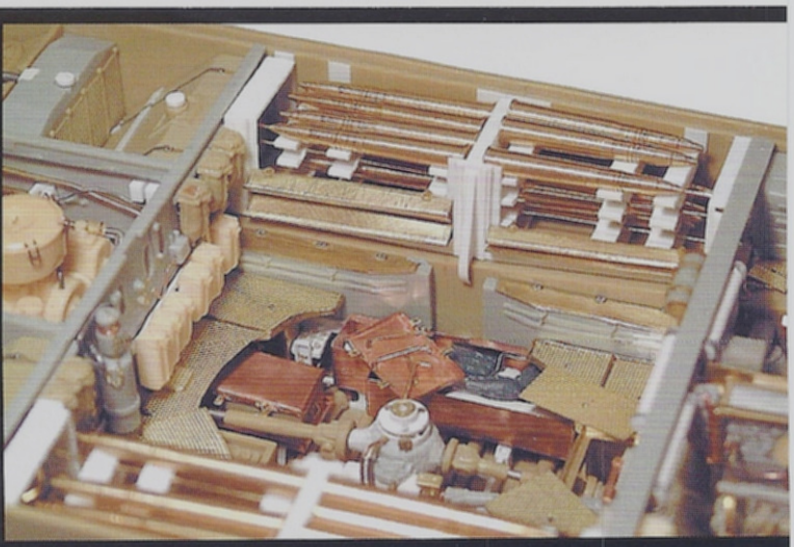
In actual fact since work on the hull was finished about six months ago a number of products have reached the market that could replace some of the work I have created myself. I donít think anyone could fail to be impressed by the new radio sets as created by Aber in photo etch. As before I have not yet decided if I will update the work that already exists.

Acknowledgements

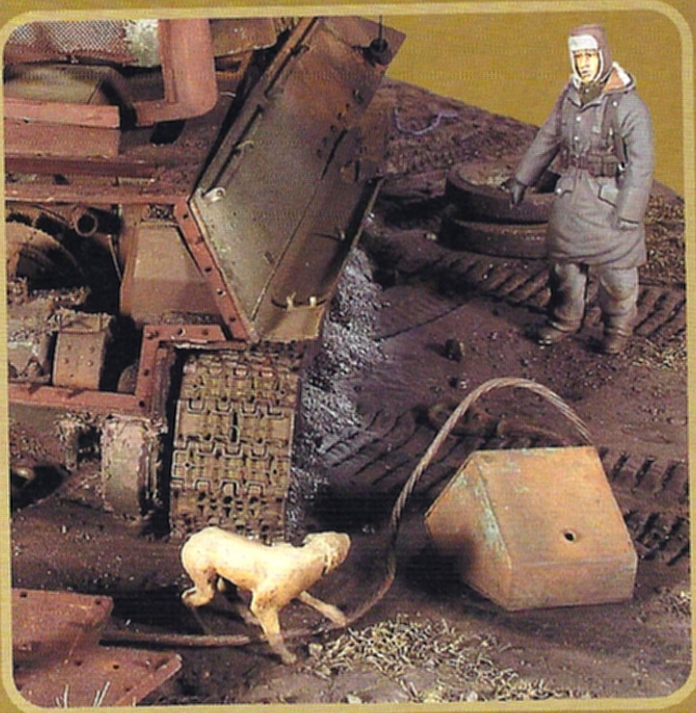
It is hard for me to single out any individuals who helped me during the course of this project as there are so many of them! Of particular help have to be the guys from the Tyneside IPMS club who re-introduced me to the joys of armor modelling and specifically to Dean Allison who was a constant source of help and advice from the word go.



A detail of the completed hull with the realistic Aber track cables installed

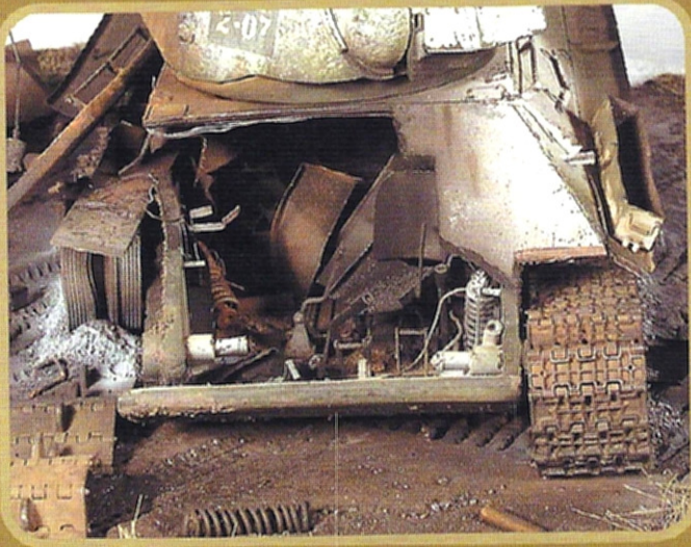


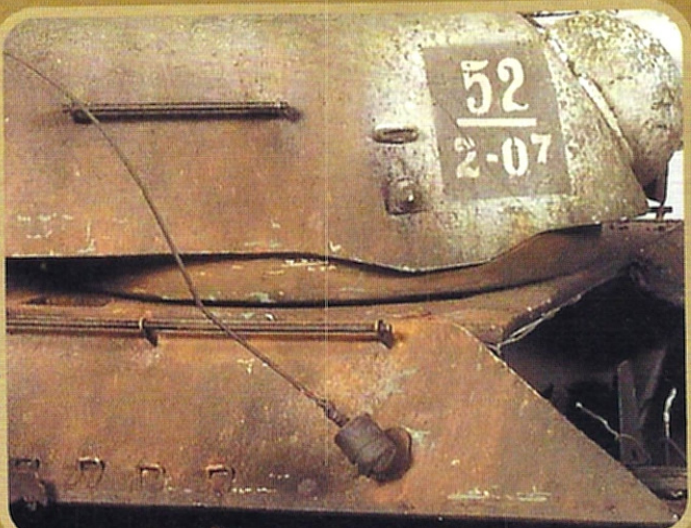
The completed ammunition racks with their concertina doors



MIS

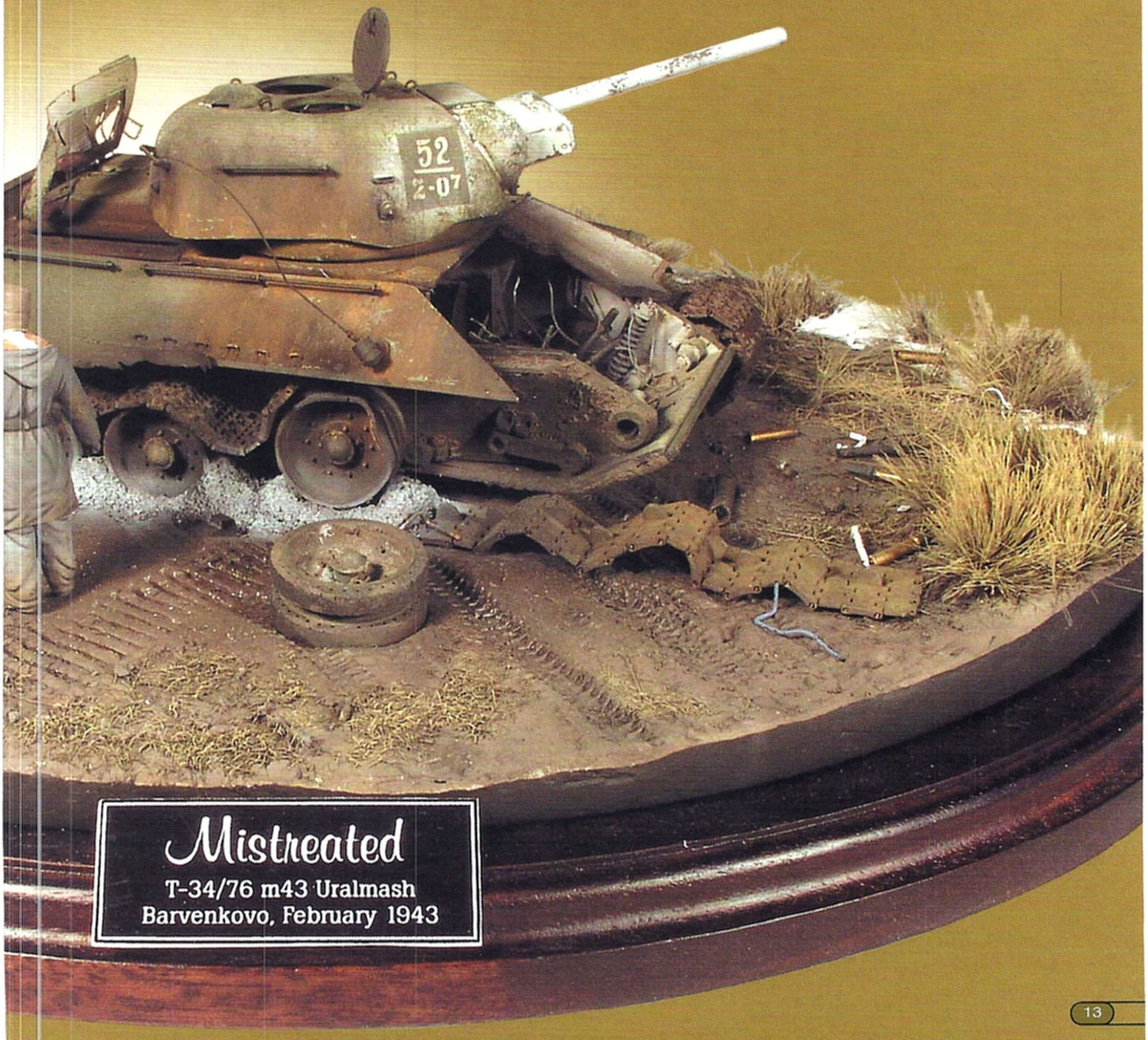
Ulf Andersson

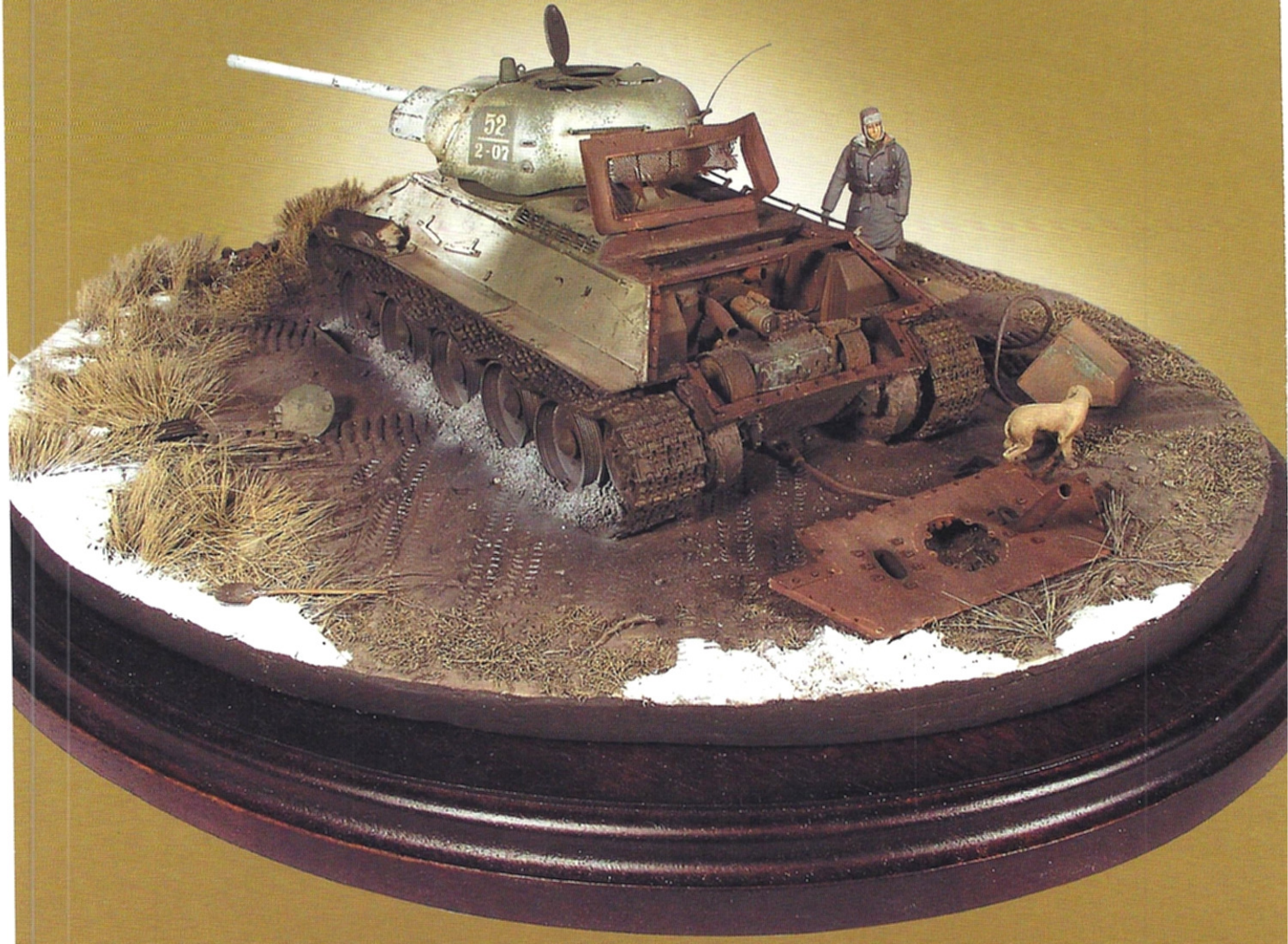




TREATED

bends more Soviet Armour


52
2-07
Mistreated
T-34/76 m43 Uralmash
Barvenkovo, February 1943

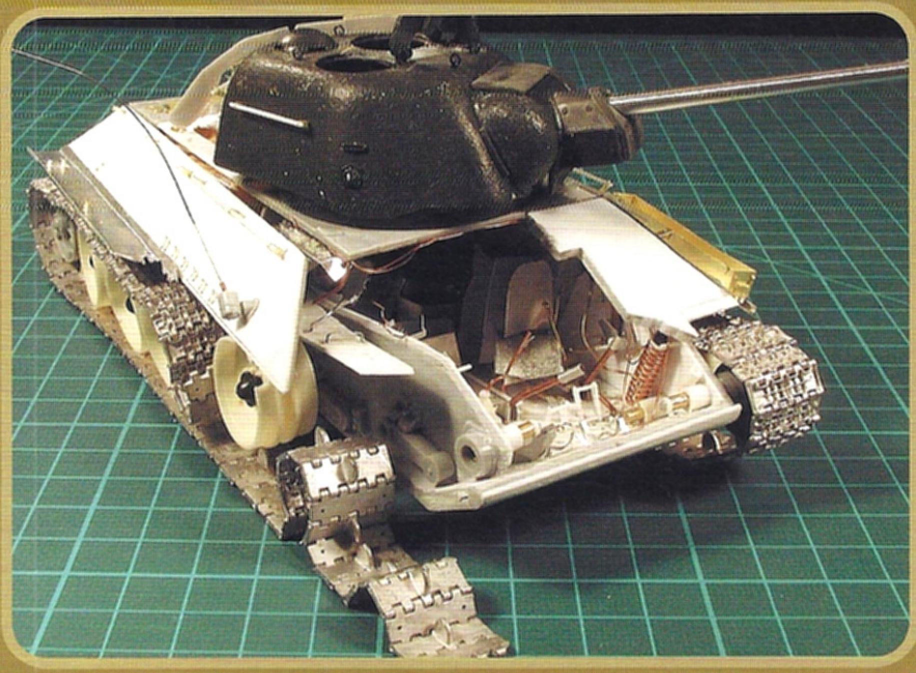


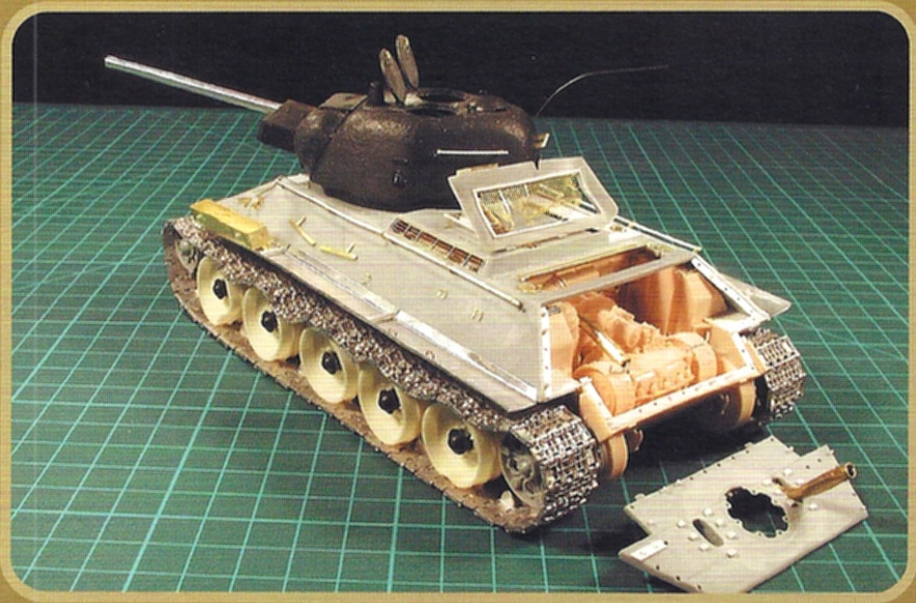
Of all the T-34 variants the model 43 production is by far my favourite, probably since it's so hooked up as the Red Army workhorse in the mammoth battles in the decisive year of 1943. When reading literature covering this period it will forever be that robust designed machine with it's Micky Mouse turret hatches that springs to mind. It didn't only help making history, it is history itself. This tank was the backbone of the Russian tank armies when the Germans pushed back in the beginning of 1943.

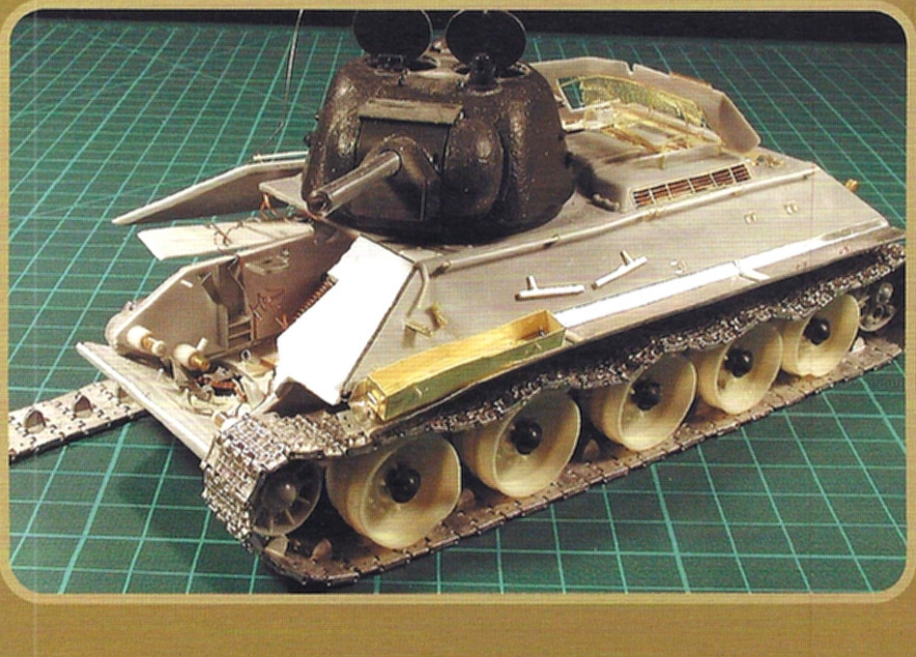
Some time ago when I was looking through "The Red Army Battle Order 1941-45" my eyes fell on a tank unit who literally took part in all the well known tank battles, the 18th tank corps. It was formed as a corps in 1942. This was part of the new Russian organisation where the huge tank formations from the initial stages of the war were found obsolete against the German tactics. A tank corps was roughly the same size as a western tank division. The 18th tank corps was formed in 1942 and fought in the battles leading to the shores of Volga. It took part in operation Uranus and the race for Kharkov in February 1943. In July it fought at Kursk and was one of the units in the famous clash at Prokhorovka. It battled it's way across the Ukrainian plains into Rumania. In the final stages of the war the 18th was heavily involved in the bitter fighting in Hungary and it ended the war in Austria. Along the way the 18th tank corps was several times badly decimated and at some occasions more or less completely wiped out. One such occasion was the battle for Kharkov winter of 1943.

In January 1943 the Russians still had much to learn about tactics, especially when their opponent was Manstein. The third battle for Kharkov was a grim reminder for the Russian headquarters that victory wasn't to be taken for granted that easily and in fact it was the battle of Kursk in July-43 that finally turned the tide on the eastern front.

On January 13 the Russians started an attack on a broad front breaking away from river Don. On the 16th of October Kharkov was back in Russian hands. The city was defended by Hausser's SS panzer corps but he disobeyed Hitler's order to turn it to a second Stalingrad and withdraw in order to fight from a more favourable position. The Russians raced on towards







Dneipr and when their lines were stretched and exhausted, Manstein struck with rapid blows from Hausser's SS-panzer corps, Hoth's 4th panzerarmie and Mackensen's 1st panzerarmie.
In this turmoil we again find the Russian 18th tank corps. It was attached to Mobile Group Popov, consisting of four tank corps, which in the German counterattack was encircled by Mackensen's 1st panzer arme (7 and 11 panzer divisions, SS division Wiking and 333 infantrydivision) By February 24, Popov's group was trapped in the area around Krasnoarmeyskoye. A number of tanks and troops managed to escape to the north but was finally caught near Barvenkovo and shot to pieces. This is like putting a magnifying glass to the map in yet another monstrous clash on the Eastern front. However, the destruction of Mobile Group Popov is the scene for my knocked out T-34, from the 18th tank corps.

Imagine a dull, bitterly cold day. The fighting in the area has died out. In the distance the thunder from the front moving north-east. The fields are littered with wrecks. Flocks of crows are flying low and stray dogs sneak around the hulks in search for something to eat. No glamour, no shining armour. Among Russians and Germans, beasts and machines alike, just the feeling of being.....mistreated.

Stop, and think twice!

When building a wrecked tank it's very important to carefully plan ahead. Yes, that's what we always do but even more so for something knocked out. Usually, a story goes with the model and this has to be visible in the finished product. Here the general feel is as important as the more physical evidence like impacts from grenades etc. Of course the painting process gives a thousand opportunities to show this, but also small details like placing the debris around the tank, the base and so on. It's quite difficult to correct things so a carefully planned story, build and paint job is necessary. This is truly challenging, and it is extremely important is not to rush the job once the main object, the tank, has been finished. Poorly executed groundwork or sloppy painted debris can ruin the whole effect, no matter how delicate the hulk might be. I find that this takes discipline... This is where the story around the model, the history, steps in and helps out. The twisted piece of scrap ends up being as interesting as, for example, the turret.

Construction

The idea for this wreck came from a photo from the battle of Kursk. I wanted some drastic and unusual damage and this photo served the purpose very well. It's a hex turret and in all respects a classic m43. Another unusual thing is the fact that this victim doesn't follow the common T-34 rules. The tank has suffered an enormous explosion but the turret is still in place and even more strangly, the hatches are both there. The lesson to learn from this is of course the fact that one should be careful before saying; " Hey, that's wrong, that never happened!" Literally anything could happen it seems.

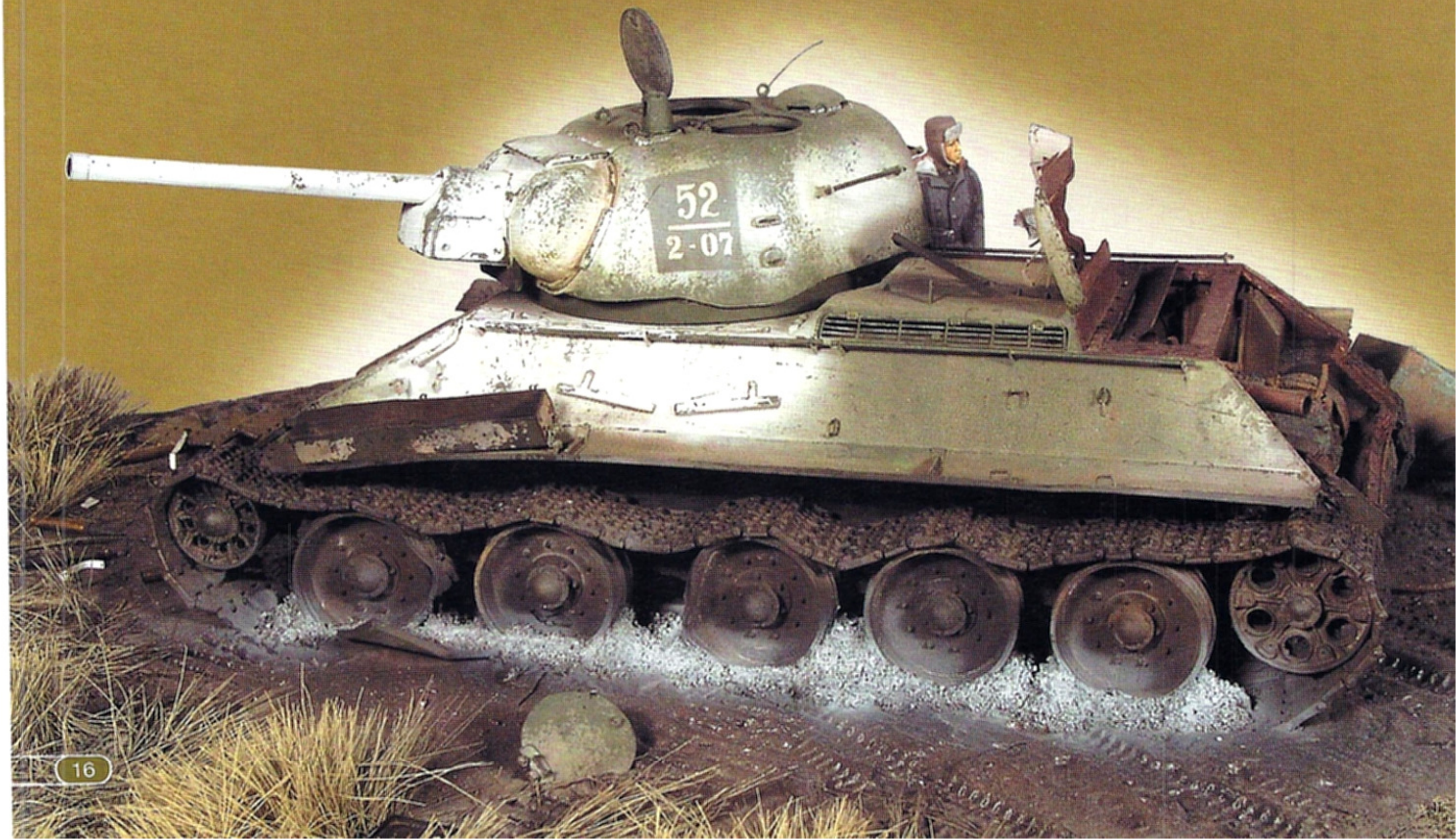
The DML T-34/85 m45 once again served as the base when I built this m43 model. The fixes to take it two years back in time don't include anything remarkable. I removed the three splashguards, filled the holes for the extra fueldrum brackets. This time I didn't have to bother rounding the front.

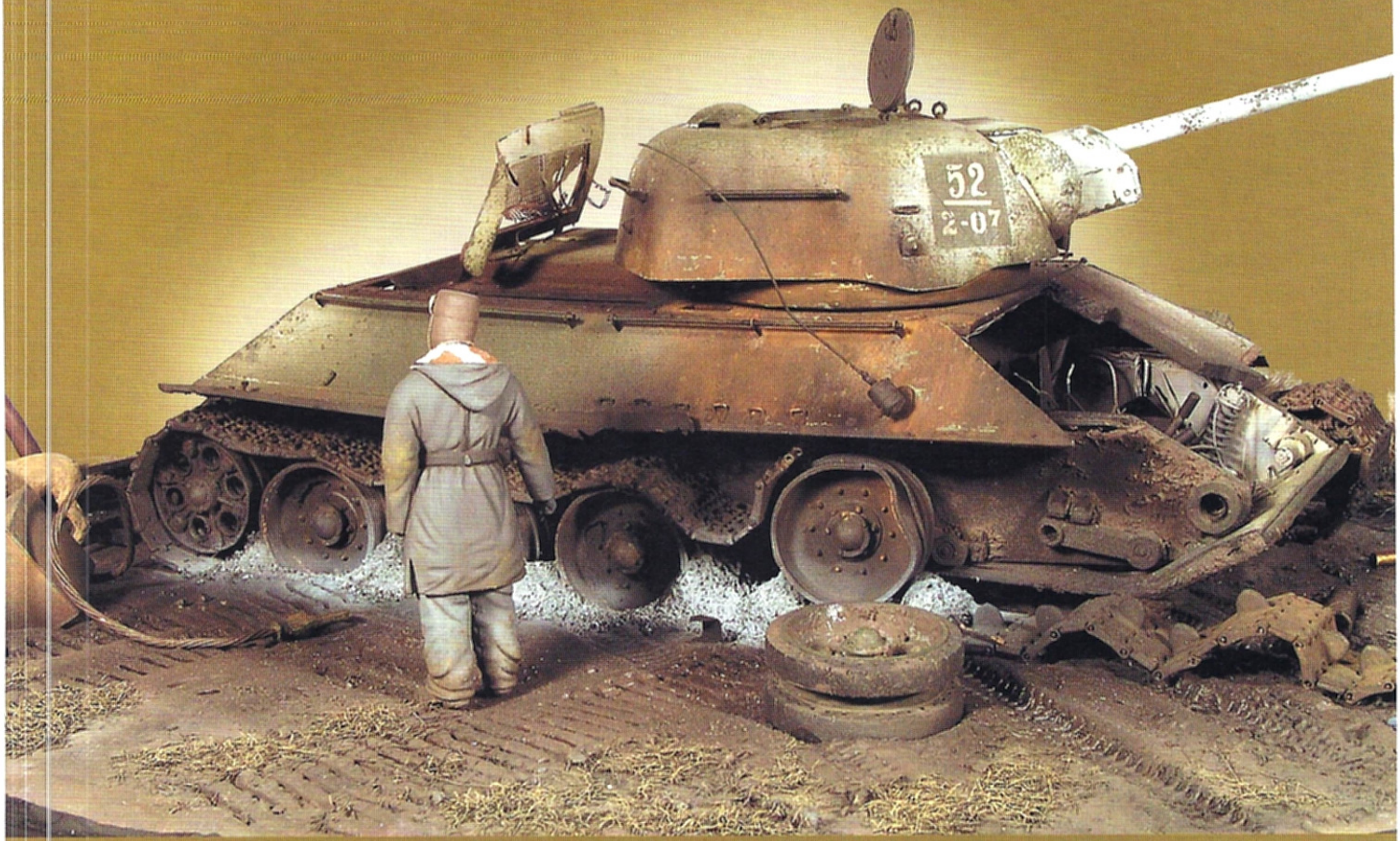
Damage is next. First I removed everything on the inside of the lower hull to get an flat surface to put plastic card onto. The escape hatch is moulded on the bottom of the lower hull. I cut it out and left the space open. The sides would be exposed at the front and it's a very strange impression one gets when looking at the otherwise in scale thin armour. Then the right side was separated from the floor and bent inwards. I used the brilliant Jaguar engine/transmission set which fits like a glove. Some improvements were made when the whole lot was going to be visible. I replaced the exhaust pipes with brass all hollow ones and detailed the fueltank supports. One cyclone airfilter was left out and the one in place was detailed around the connection to the bulkhead. Finally, I had to add the armour to which the rear plate is attached. I carefully drilled out all the holes in their proper place and put some bolts left with their heads blown off. Of course this has to correspond nicely with the plate laying on the ground directly behind the vehicle. The large rear plate was also detailed referring to photos.

I got the T-34 ABER set as usual for this model, even though I never use all the microscopic, tiny parts. They tend to take value away instead of adding when I'm dealing with it. I simply have to practice more I suppose...however, it's great for grilles, louvres, toolboxes and other detailing. I left one of the rectangular louvres out over the airintake and left the top access hatch open and quite abused.

Some time ago I built the ARMO T-34 hull which was really interesting because it's constructed as several parts. Back then, I decided to take one of the armoured covers away in cas I ever did a KO'd T-34, something I've also seen on some photographs. The right cover was taken away with a fine saw and I built the plating underneath it from plastic card. The opening for the cooling louvre was made with the Exacto knife and lids and bolts are the ABER parts.

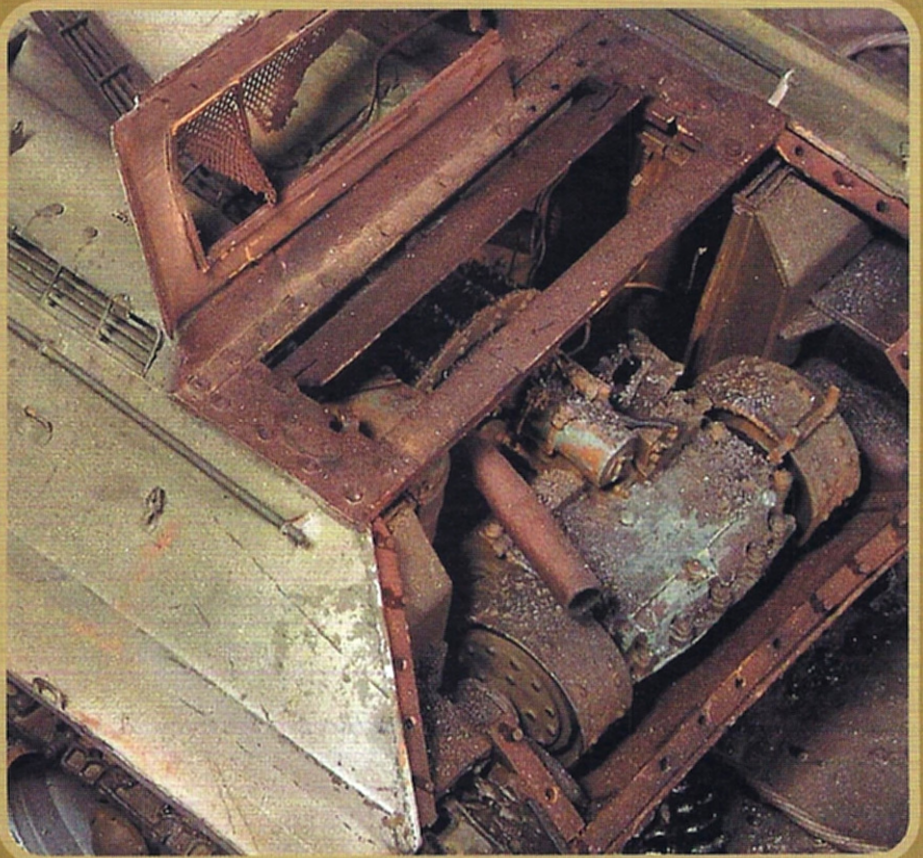
Fenders were made from printers aluminium, an absolutely fantastic material for constructing your own parts and easy to shape as desired. The last thing worth





mentioning on the hull outside are the rails. The ones in the Tamiya kit, which supplied me with the turret, are to thick to match 1:35, especially the little supports. They can easily be replaced with new ones from fine rod and supports cut out from thin plastic card.

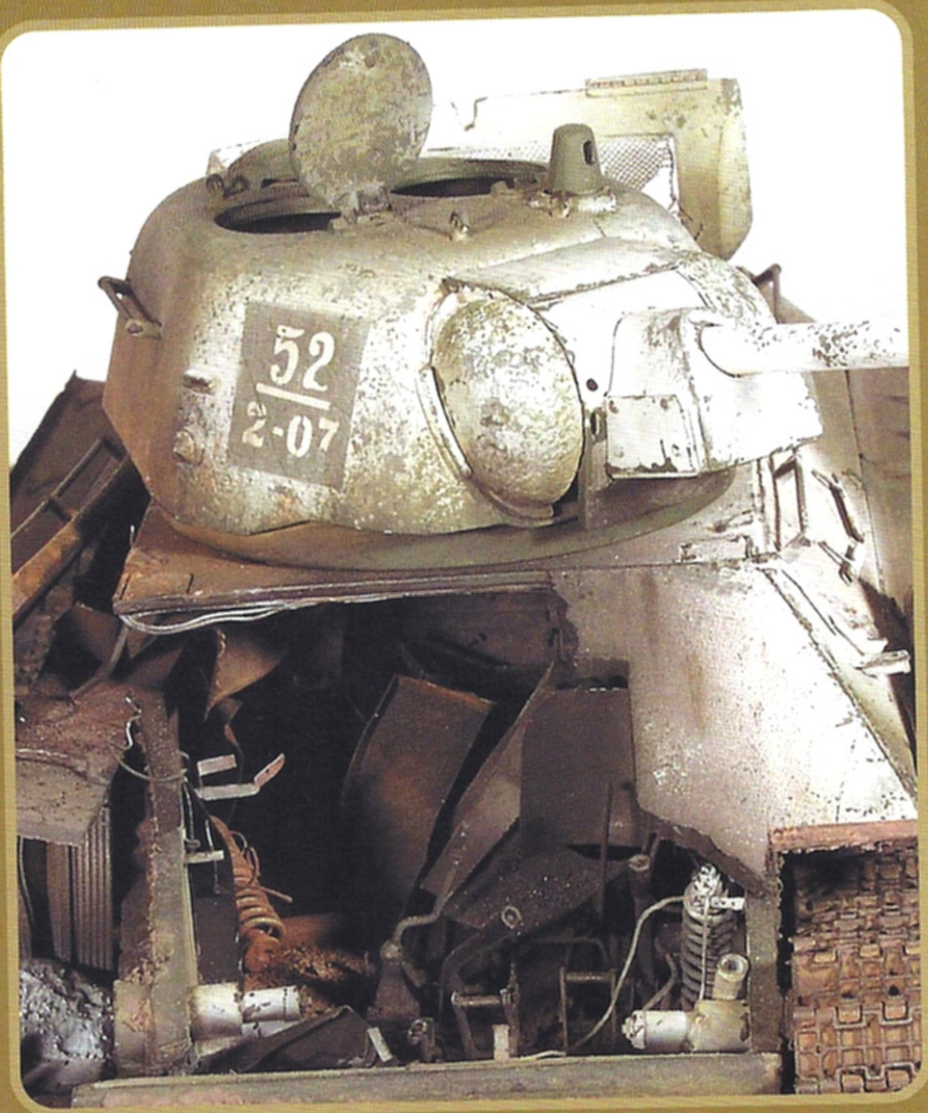
Just in time for this project, I heard rumours of MIG production releasing a set of T-34 wheels. I got myself a set and they are superb! Detail is crisp and the rims are nicely detailed. They are all more or less bent, something often seen on burnt out tanks. Great touches like this makes it a true joy to use them. Why has nobody thought of this before? Who cares? Here they are! The excitement was quickly rising when I added the Fruilmodel tracks and tried them on. The T-34 usually had a tight fit for the tracks but when the rubber's burnt off there's some slack to distribute over the wheels. Following the photos, I left out the right idler and front road wheel. For further "feel" I lifted the second roadwheel as if jammed in top position.

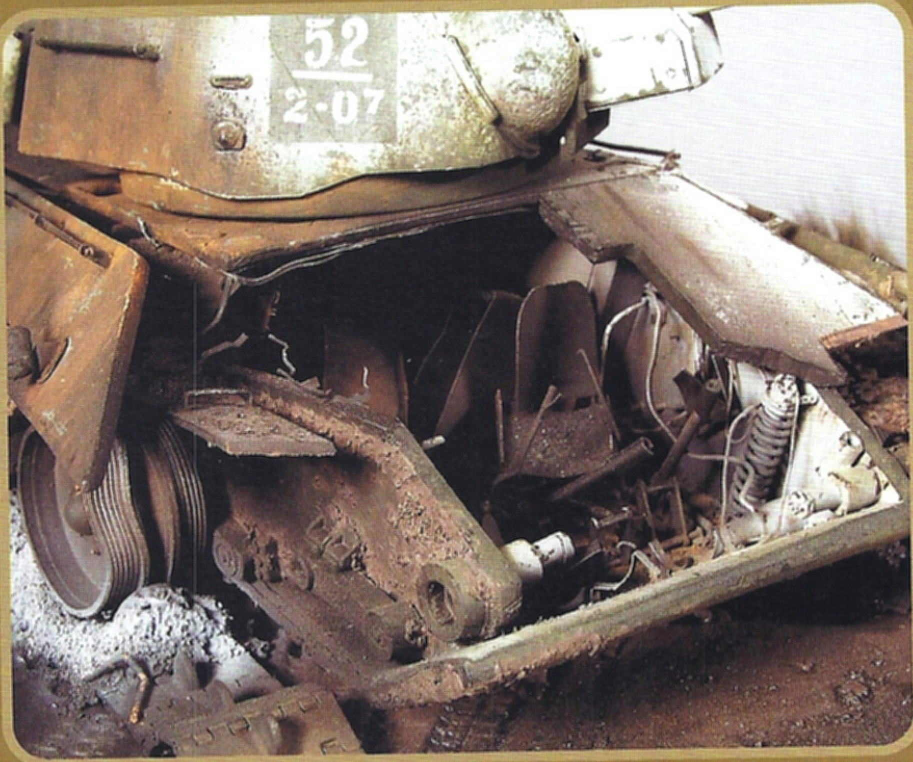


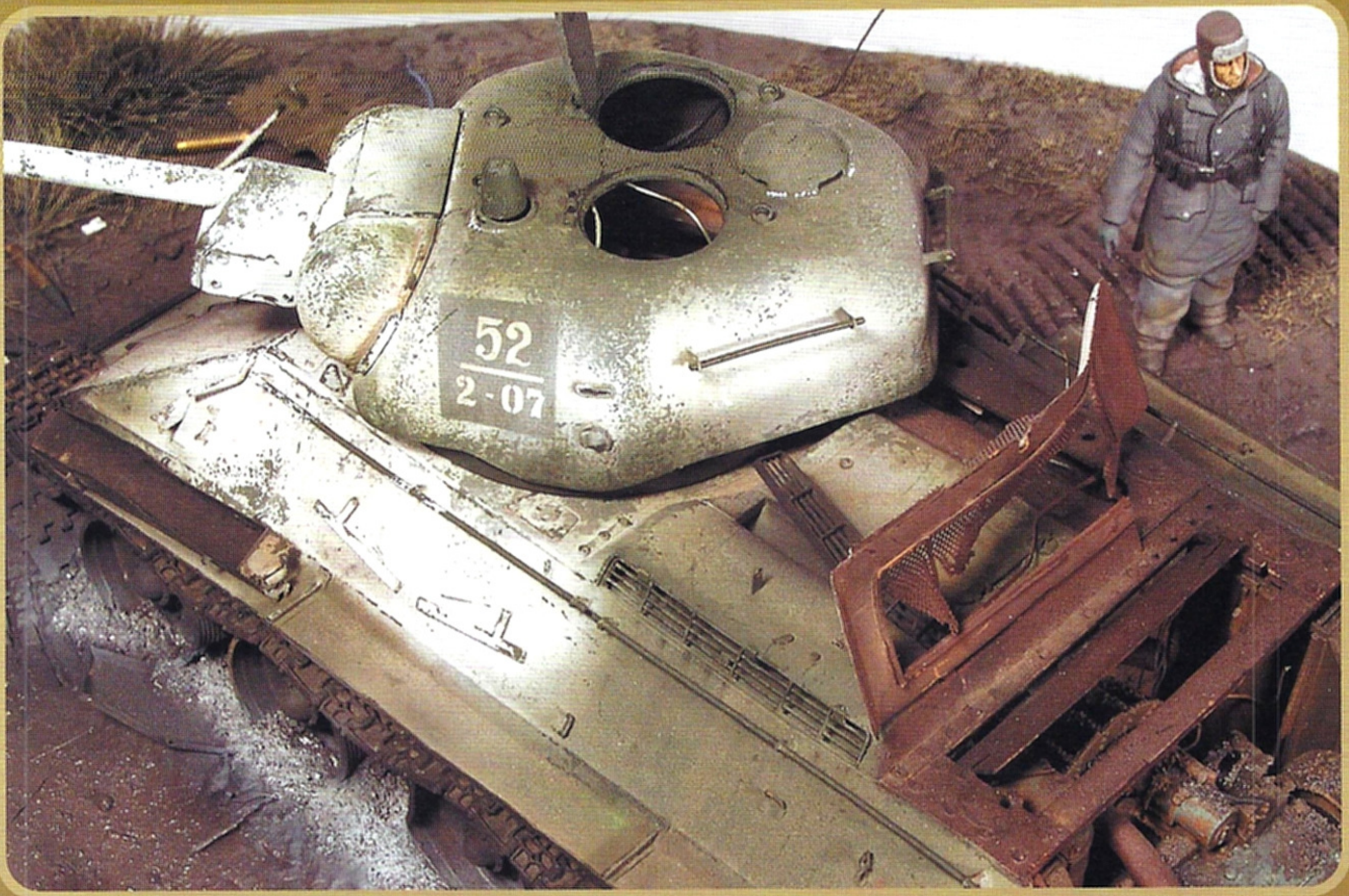
The whole upper hull right side was scratchbuilt from plastic card and the kit hullside cut away. The glacis was removed and a plastic card replacement for the left side was constructed, using the kit part as a guide to get the drivers hatch in it's right position.

I usually use Milliput Superfine White for mud. Work it until really soft and warm, then add saliva and work the putty to a creamy substance. This is great for fine lumps of dirt. I apply it with a toothpick and work it around until happy with the result. Maybe it sounds strange to add saliva, why not water? My experience is saliva helps getting it creamy, water doesn't help bonding the Milliput as well and I simply had to explain that weird habit of mine... Some other touches were added like removing one suspension maintenance transmission lids.

The turret is from the Tamiya kit. It actually looks a bit to small, but I couldn't find a proper aftermarket hollow one. If anyone has a suggestion, please let me know. On the outside I did nothing except to replace the rails and add a Jordi Rubio gun and some ABER detail on the hatch. At the bottom I had to remove some plastic to make it sit properly in the DML turret ring. The internet is a fairly good provider of interior references but for this model the best thing was a T-34 at the Axvalla museum just a short drive from my hometown. (This is a fantastic museum with a great collection of tanks ranging from the 1920's to the present day with access to the vehicles in a way not possible at some of the more well known museums. Free photography and helpful staff make it Well worth the trip.) It's a m45 tank but many of the features are common for the 43-45 models, especially the drivers and radio operators positions at the front. My particular tank exploded due to fire in the right front fueltank. Even if the T-34 was powered by diesel engines a half full tank blowing up generated an enormous energy. The fighting compartment was just a repetition of the techniques of my previous project, a blown up ISU152. I scratched the interior using the references mentioned. For this I used printers aluminium, plastic card, fuse wire, plastic/brass rod and....patience.







The turret's interior is not that visible. I built a complete gun, the gun traverse mechanism, the gunners seat and the drum magazine brackets at the rear. To enhance the havoc created by the blast I added the odd wire hanging down from the roof and walls. As a the last stage I painted various places, such as the fighting compartment floor, with varnish and sprinkled resindust and some tiny pieces from plasticard and let dry. Studying photos clearly show how heat and explosions makes fragments of colour, small parts of the interior etc fall down. Another aspect is the dirt on the floor from boots and other equipment.

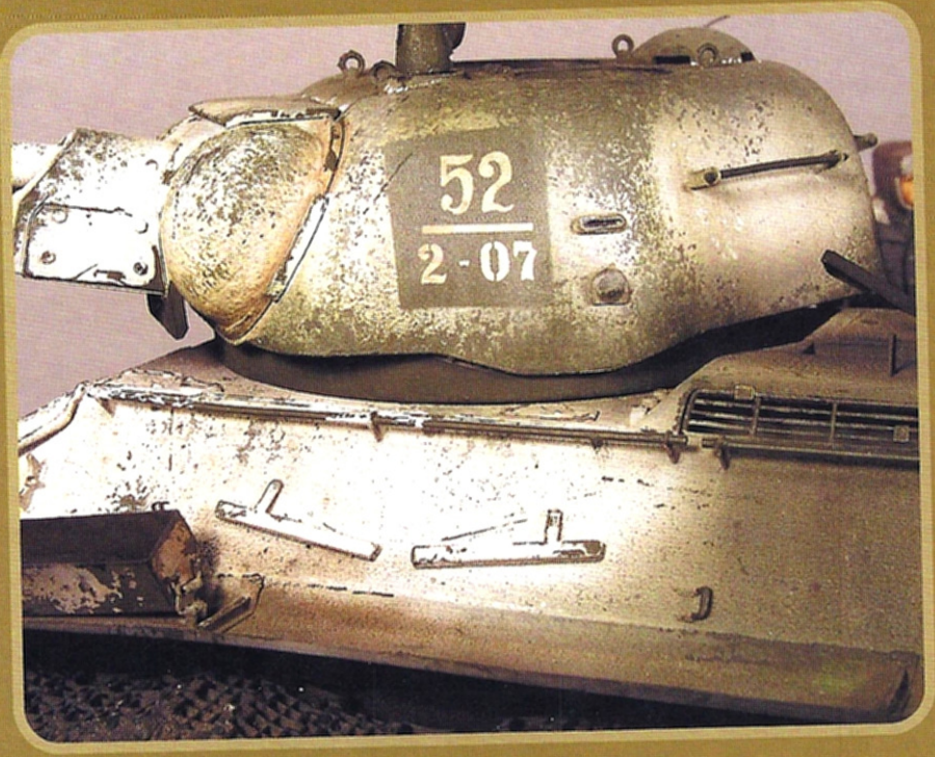
Needless to say, I dry fitted the upper and lower hulls several times during the construction in order to make them fit together and get the right feeling of the overall impression. For example, by just rotating the turret a bit might change the attitude of the hulk completely.

Painting

As usual, I relied on Humbrol for this model. I had this grand ambition trying out some new brands but chickened out after using black with the airbrush. I know there is so much exciting new stuff out there but I simply won't break the tradition with Humbrol. Some modellers say it doesn't airbrush well, but I don't have any problems. Perhaps the result would be so much smoother with something else? Maybe I will have the courage next time...

The time of the scene requires whitewash, which suited me fine since it helps bringing out some more contrast. Before starting the project I had in mind something different from the usual rusty all brown wreck. This time I wanted something more freshly burnt, where the rusting process hadn't started yet. Only the area around the explosion would be changed in rusty nuances, the interior being more affected by smoke dominated by black and grey. Another indicator of the tank being recently knocked out is the ashes around the wheels. It didn't take long before it blew away or were flattened by rain or snow.

I started out by priming the whole thing, inside and outside. Citadel Skull White is great for this, straight from the can. Then I concentrated on the interior. I painted the whole inside black as a base (this was when I got uneasy leaving the Humbrol track...) I painted the engine and gearbox as separate parts. The whole enginecompartment and inside of the rear plate and airintakehatch was painted as if primed in a dark redbrown. The same thing goes for the areas exposed after the blast on top of the enginedeck. Then I gradually airbrushed it darker in different shades to make it look dirty from smoke and dust. The fan, filters and gearbox were first painted light brown and then with a fine brush I painted light green chips to make it look like the basecoat has vanished after being exposed to heat and wear and tear. This is a great touch that really adds realism to a paint job like this. I picked it up from a very useful article by MIG. I weathered the area using different colours of oils. The engine was painted black and washed with oils in different brown colours. In irregular patches I added some green flakes from the original colour. Finally I airbrushed very lightly with black



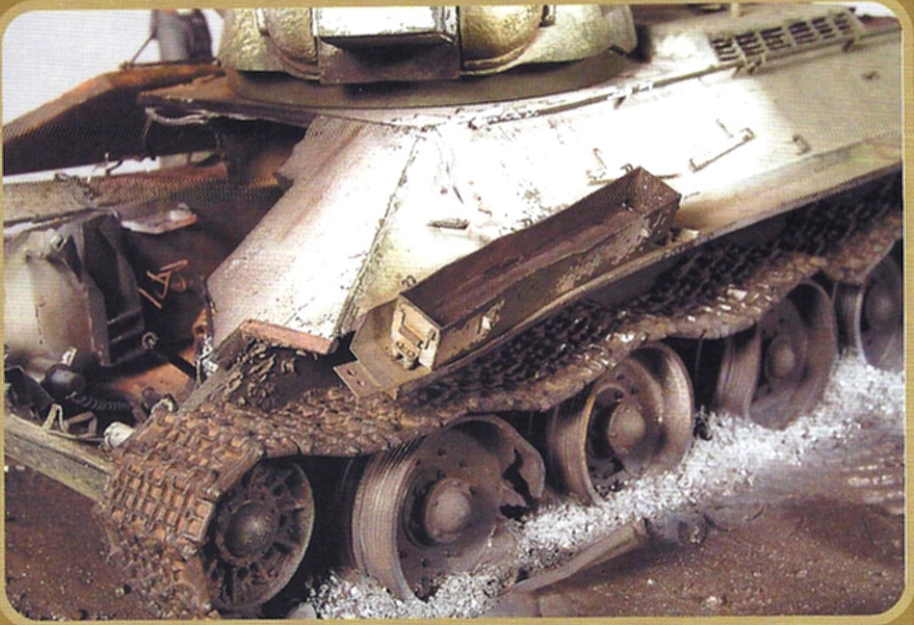
over the whole area to simulate the effect of smoke from the fire. The fighting compartment was already primed white so I weathered everything with oils, mainly Raw Umber and did some chipping with a fine brush. I now painted as much detail as possible and started to get a smoky impression with different layers of black and grey. The right side, where the blown up fueltank is, was painted in a rusty brown colour. It is important is to make this rusty area alive and break it up with other colours. I used some different oils and did some chipping with Humbrol. I hardly ever drybrush. In order to highlight I exclusively paint with a brush and diluted Humbrol.
A couple of years ago I built another T-34 in whitewash and there I developed a technique that I'm very fond of and used for this model as well. It's all based around the use of Humbrol Maskol. I start by painting the whole tank in a dark green colour. Then I apply the decals. I had problems finding proper markings for the 18th tank corps in beginning of 1943 and stuck to documented ones from 1945. There was probably a difference but this was as close as my research could get. It's a combination of Verlinden, Archer and Letraset dry transfers. I sealed the decals and the rest of the basecoat with a fairly thick layer of satin varnish. Now it was time to do some chipping, using black, and weathering with the trusty oils. The idea is to get an almost complete paint job done before the whitewash is painted on. Now it's time to get a sponge and carefully put on some Maskol on areas that are meant to be green. It's vital to have a plan for this beforehand and an idea what the final result will look like, otherwise it will be very obvious the finish doesn't follow a natural line. I also masked off a square around the markings. Now I sprayed white, preferably at the front sides and in other areas not exposed to wear. Russian infantry usually followed tanks in battle sitting on the enginedeck and I made that visible by leaving the rear part of the tank more or less green. The Maskol trick was repeated a couple of times in places to get a layereffect and some depth to the finish. When happy with the result I turned back time by adding some bright white chipping in dead angles where the original whitewash stayed. Of course I'm talking about areas exposed to light like top of the turret. In darker places it will look strange with bright white shining through. Finally this stage was completed by adding some custom made green chipping. It's just amazing how a couple of chips might make or brake an overall appearance. Again, it's important to hold back. No matter how good an effect a technique will give. Overdone it just looks wrong! On the other hand you need to push and get the maximum effect, it' a delicate problem, indeed!
I weathered the outside with oils and did some more chipping using different green colours. In places with a more faded look I airbrushed the base coat green, i.e. turret roof and engine deck. The right front hullside and lower part of the turret was painted light brown and weathered step by step towards an more exciting and realistic finish than plain brown. For this I used oils. I didn't spend to much time on the wheels. Getting the whole thing married to the ground would destroy this later on anyway. Wheels and tracks were therefore painted in a dark brown, nearly black colour.

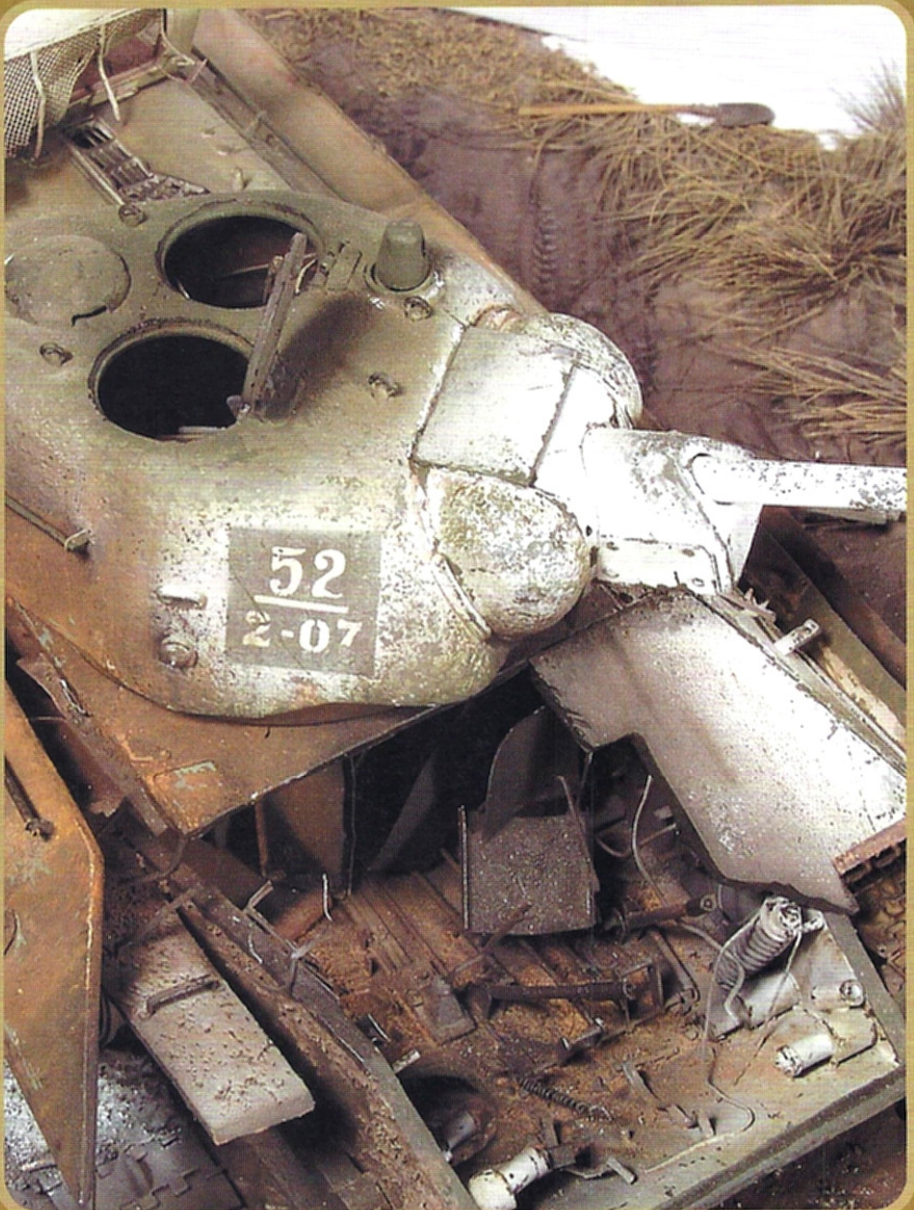
The Base

Over the years I prefer the model sitting on a piece of groundwork. It livens up the whole thing and adds atmosphere. It brings more excitement to the presentation and also it´s a great indicator of the actual size of the vehicle. For this model I choose quite a large base. The reason for this is to give the feel of the endless plains in the areas where this battle took place. I'm not saying I succeeded, but the idea was to have this tank rolling over frozen ground, being knocked out, set ablaze, heat melting the snow around it, the sheer weight of the tank making it sit deeper in the dirt after the ground was warmed up. After the fire stopped the freezing climate once again regained control hence the wet look only close to the wheels.

I used plexi glass to sculpt on. Ground work was constructed with Das Pronto. I made two trails on it crossing each other in the middle. One is from Panzer IV track and the other from Willys Jeep wheels (Lend & Lease I suppose...) I also took the finished pieces of large debris and lightly pressed them in place for a tight fit with the ground. Finally crushed plaster was sprinkled over areas painted with diluted white glue. When the ground had started to harden, I cut out two lengths of it were the tank was going to be placed. Doing this it would sink down nicely in the softened ground.

I used Woodland Scenic field grass fixed with white glue and had a hard time fixing it to the ground. No matter how I struggle it always ends up looking kind of strange and artificial. Lately I've heard about Silflor and their products. That's definitively something to try out in the future. As short grass all around I used the traditional railroad, poisonous green grass. Once all this was in place I airbrushed the whole thing dark brown and fixed the model in it's place. Now I started to sculpt the ashes around the wheels using Milliput Superfine White. This builds up the volumes of the heaps, but not the texture. When dry, I painted the with white glue and sprinkled plaster crushed to dust over it. This recreates quite well the ashes I've seen on photographs. When dry, the ashes were painted in exactly the same colour as the ground. This is important in order to get an even start for the rest of the paint job. I washed the ground with different oils and airbrushed the tall grass in a yellow nuance. Groundwork is a different story from tanks, yes I do drybrush here. I drybrushed the grass in lighter tones and also highlighted the rest of the ground. The next step was to airbrush gloss varnish in the area just next to the model. I airbrushed the ashes black, lightly covering





some of the ground as well, and then with light grey. By doing this the vehicle was married to the ground in a convincing way. Finally I painted some highlighting with white using a brush. In the process the wheels and tracks were treated with the same colours as the ashes, but not so heavily and I added some detail painting to the wheels and tracks.

Only one thing left to do and that's a nightmare that is snow. I used microballoons fixed with white glue. In some places in several layers, in others just one go. I think it's terribly difficult to get decant looking snow. Lucky enough, the scenario required only some at the edges.

After carefully painting the debris and the dog they were all glued in position and everything except the figure was complete.

Figure

The figure is a result of reading a book of the Norwegian volunteers in SS div Wiking, one of the units that molested Popov's forces. A veteran was telling a story were he was standing in the middle of thirteen burning T-34s in this area. I know, it's a long shot but still enormously thrilling. The dog is very nicely sculpted and looks very alive. I'm not sure, but I think it comes from a Japanese manufacturer.

The grenadier is from Hornet, with its original head replaced with another Hornet head. The right hand was switched in favour of one with a pointing finger. This to give an impression of calling to the dog. The dog, on the other hand, looks very suspicious. Too many soldiers have kicked it and chased it off in the past. I painted the figure with Humbrol and fleshtones with oil, with lots of staining on the trousers and boots to make them blend in to the ground. A common lining of the parka hoods was rabbitfur. Therefore I painted this part brown and white.

Conclusion

A really fun project. It has taken some time, but it was well worth it. I simply love the T-34 and have modelled quite a few. It took a lot of energy and planning to make this one work out in the end but it was another great experience. Building a knocked out T-34 is only a natural consequence of this love affair. Eastern Europe was more or less littered with wrecks from this great fighting machine. T-34/KO as a family must have been one of the more common marks?

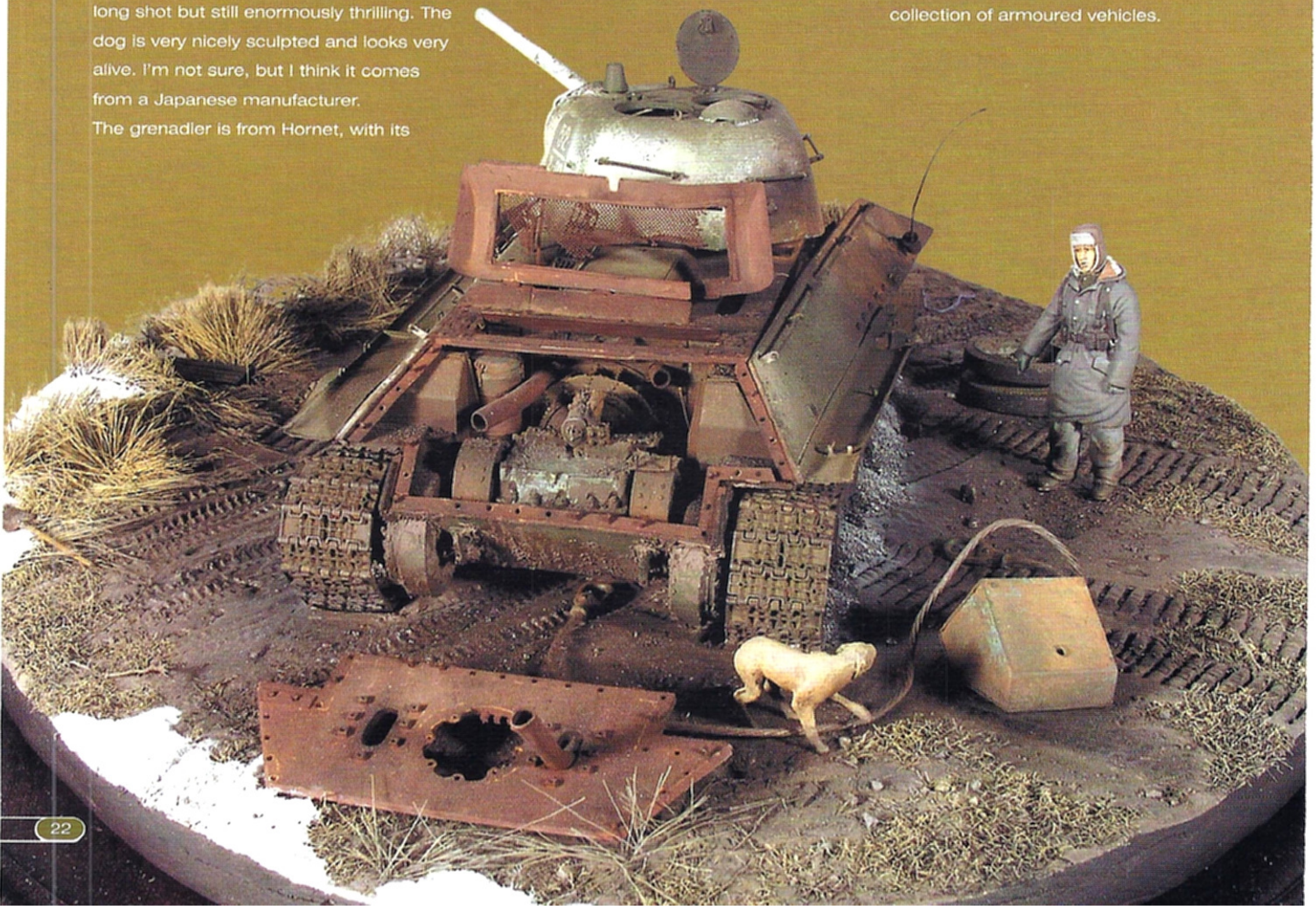
I have also had the privilege of reading some fantastic books in the process and that only adds more ideas and possibilities for future projects.

Before, I built a model and perhaps some time later read about the period of time and other facts that was very important for the finish of the model or the general feel concerning it. This has changed. Nowadays, some interesting historic scene or stories from veterans usually act as trigger for a modelling project. I'm not saying this or that is right or wrong, all I can say is it gives me another dimension to modelling. This is very obvious when adding a base. It simply feels more complete. Just some personal reflections. Happy modelling to you all!

Acknowledgements

A great big thank you to all who have contributed with pictures on various parts of the T-34, and in particular Mirko Bayerl who has blessed this model with inspirational photos from his outstanding references.

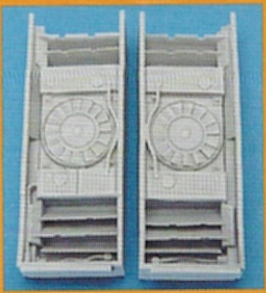
The Axvalla museum also deserves some credit for their helpful attitude and great collection of armoured vehicles.

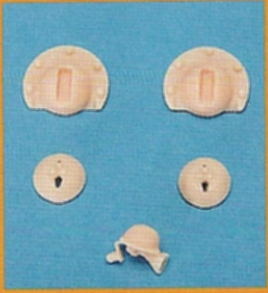


MODELING ARTISAN
MORI

Available from AFV modeller

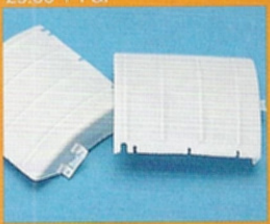
MGP02 Tiger II final pattern mantlet & hatch £9.00 + P&P


MGP09 Panther A/D radiator inserts £16.00 + P&P


MRP04 KV series MG mount & horn £4.50 + P&P

MRP08 T34/85 late standard drive sprocket £5.00 + P&P

MGP01 503 Tiger1 stowage bin £7.50 + P&P


MGP08 Panther overfenders £6.00 + P&P

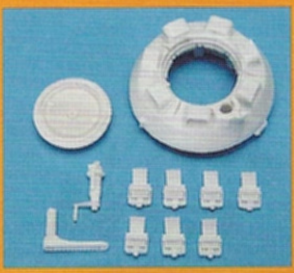
MGP04 Stug III A-E barrel £6.50 + P&P

MRP01 KV1S/KV85/SU152 Wheels £19.50 + P&P

MRP02 KV1S mantlet with additional armour £8.00 + P&P

MGP02 KV1S engine hatch £4.50 + P&P

MGP05 Panther sprockets with casting numbers and hub patterns for all variants £10.50 + P&P


MGP07 Panther cupola with interior detail £10.50 + P&P

See the rest of the Mori range of figures and accessories at www.afvmodeller.com

Available from AFV modeller

LEADWARRIOR

Pz.Kpfw. I Ausf. A mit
2cm. Breda mod. 35 Gun
1:35
LW35005C Breda mod.35 Gun To convert Tristar Panzer 1a £9.50 + P&P

kl.Pz.Bf.Wg. 1 KIA
1:35
LW35004C kl.Pz.Bf.Wg.1 To convert Tristar Panzer 1a £9.50 + P&P

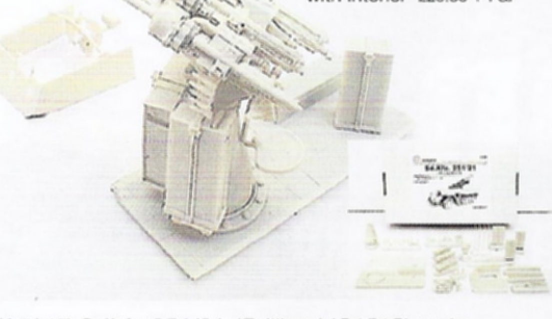
LW35002 V2 Launch vehicle Conversion for Tamiya 35050 £26.00 + P&P

LW35001 War time pattern Opel Blitz Wheels £12.50 + P&P

Munitionsslepper
LW35007C Munitionsslepper auf Pz1a To convert Tristar Panzer 1a with interior £25.50 + P&P

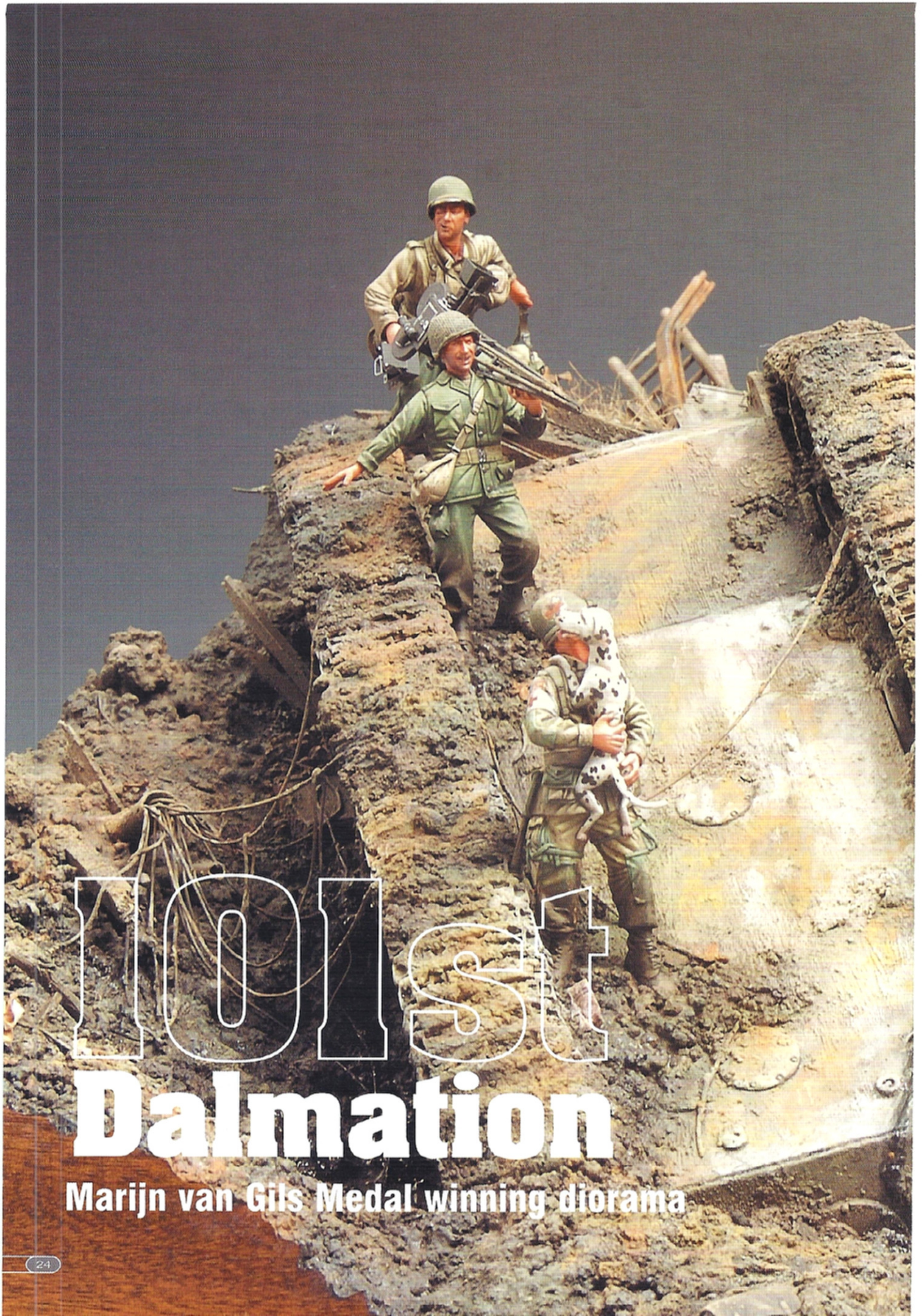
Munitionsslepper
auf Pz.Kpfw. I Ausf. A
1:35
German Panzer I Ausf. A
003
Bonus Pack Munitionsslepper and Tristar Pz.1a save £5.00 only £10.50 + P&P

kl.Pz.Bf.Wg. 1 KIA
1:35
003
Bonus Pack Command conversion and Tristar Pz.1a save £5.00 only £10.50 + P&P


Sd.Kfz. 251/21
LW35017 Sdkfz 251/21 (Drilling MG151S) resin conversion kit for Tamiya 35195 £25.00 + P&P

FlakPanzer I
1:35
German Panzer I Ausf. A
003
Bonus Pack Flakpanzer conversion and Tristar Pz.1a save £5.00 only £10.50 + P&P

Pz.Kpfw. I Ausf. A mit
2cm. Breda mod. 35 Gun
1:35
Bonus Pack Breda Turret and Tristar Pz.1a save £5.00 only £10.50 + P&P



101st Dalmation

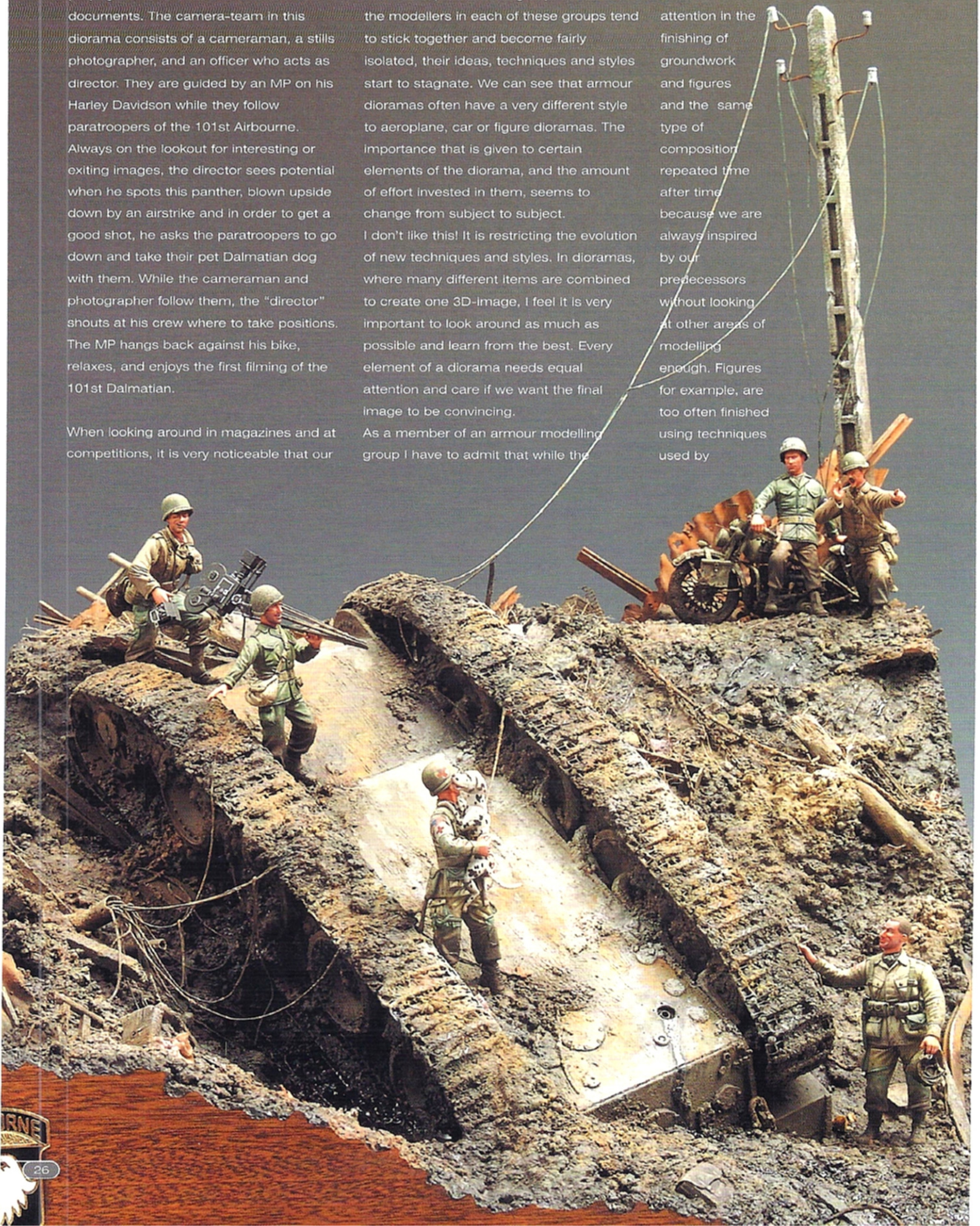
Marijn van Gils Medal winning diorama

During WW2, America employed cameramen in all of their main actions. In reporting the battles, they provided both propaganda material and historical documents. The camera-team in this diorama consists of a cameraman, a stills photographer, and an officer who acts as director. They are guided by an MP on his Harley Davidson while they follow paratroopers of the 101st Airbourne. Always on the lookout for interesting or exiting images, the director sees potential when he spots this panther, blown upside down by an airstrike and in order to get a good shot, he asks the paratroopers to go down and take their pet Dalmatian dog with them. While the cameraman and photographer follow them, the "director" shouts at his crew where to take positions. The MP hangs back against his bike, relaxes, and enjoys the first filming of the 101st Dalmatian.

When looking around in magazines and at competitions, it is very noticeable that our hobby is always subdivided into armour modelling, figure modelling, aeroplane modelling, etc. Consequently, dioramas are also separated into groups. Because the modellers in each of these groups tend to stick together and become fairly isolated, their ideas, techniques and styles start to stagnate. We can see that armour dioramas often have a very different style to aeroplane, car or figure dioramas. The importance that is given to certain elements of the diorama, and the amount of effort invested in them, seems to change from subject to subject.

I don't like this! It is restricting the evolution of new techniques and styles. In dioramas, where many different items are combined to create one 3D-image, I feel it is very important to look around as much as possible and learn from the best. Every element of a diorama needs equal attention and care if we want the final image to be convincing.

As a member of an armour modelling group I have to admit that while the evolution of styles within this group has been wonderful over the last five years, I feel that we are often backward looking. We see a lack of attention in the finishing of groundwork and figures and the same type of composition repeated time after time because we are always inspired by our predecessors without looking at other areas of modelling enough. Figures for example, are too often finished using techniques used by



other armour modellers, instead of learning from the current specialist figure modellers. This diorama is another attempt to break out of these limitations, and show that it is not impossible to cross the borders of two of these groups. The main effort went into figures,but the composition is more typically an armour diorama centered around a vehicle although less tight with more space for scenery. The presence of the panther (which is barely more than part of the groundwork) and the Harley Davidson make it look like an armour diorama, but a lot of the techniques employed are 'borrowed' from figure modellers. An armour diorama with figurine techniques or a figure diorama with an armour diorama composition?

Composition

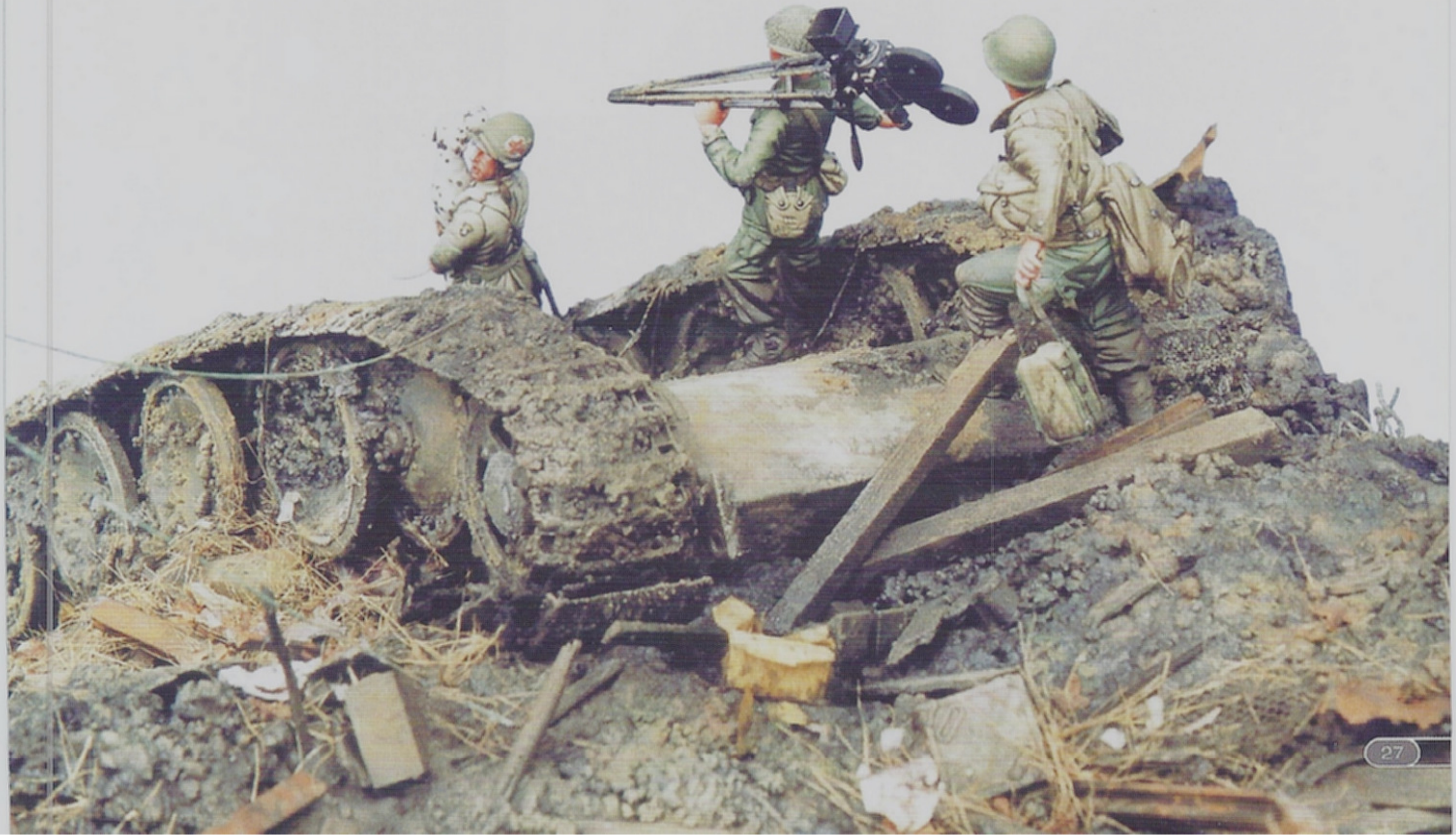
The basic idea came from a photograph found on the Internet which showed an upturned Panther on a slope being examined by American troops. The diagonal position of this panther formed an excellent composition. I just needed the figures to emphasise it, so three figures are positioned on the tank, climbing down over the suspension, enhancing this main diagonal line. The paratrooper at the bottom right completes this line.

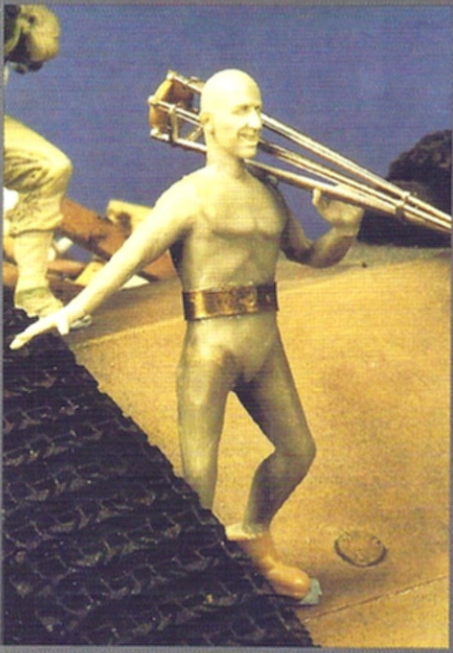
All that was needed now, was something at the right top corner to balance this main line, in the shape of the Director and MP with his bike. The interaction between the Director and the paratrooper holding the dog connects two parts gives a counterbalance. The corrugated sheets provide a background for these two figures and the telephone pole adds more height to the scene. Its wires also visually connect with the tank and the main diagonal line. Colours were used to emphasise the focus of the scene. The bright white of the Dalmatian dog and the red crosses of the paratrooper holding the dog amidst the drab coloured environment attract the eyes of the viewer to them. The muddy slope gives an opportunity to play with darker and lighter tones. Because of the thin layer of mud on the tank, it dries more quickly and gets much lighter, almost white. The groundwork around stays wet and thus dark. The outside edges of the diorama were kept very dark, while towards the focal point (paratrooper with dog), the mud would gradually get lighter, putting the focus on the centre of the scene.

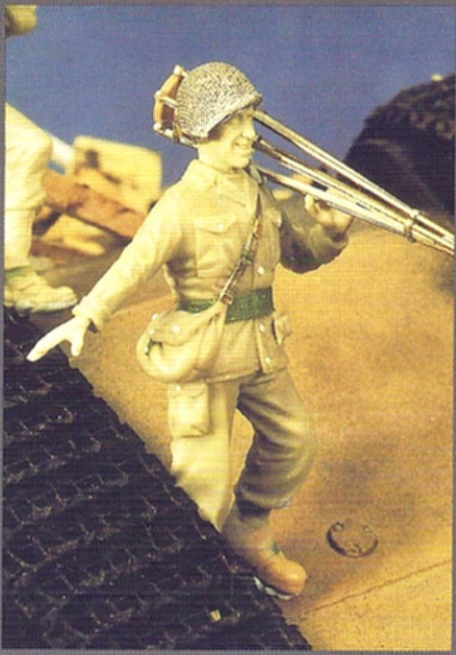
Sculpting

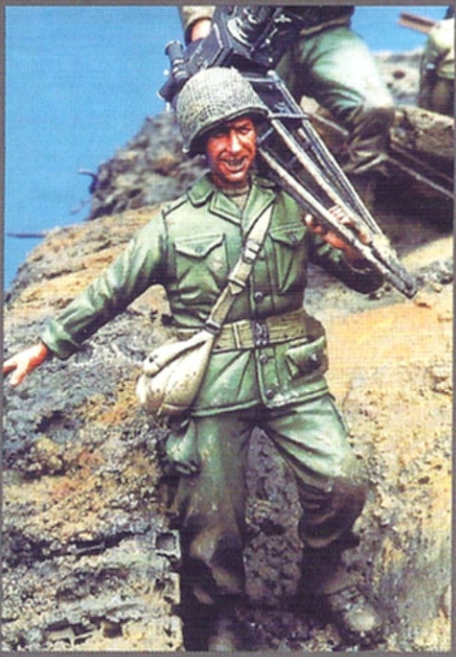
Sculpting your own figures might sound very daunting to most armour modellers, but it is not nearly as difficult as it seems. It takes also far less time than you might expect, less time than I need to paint them, and you can easily avoid the tricky parts by using commercially available heads, hands and accessories. The big advantage is that your figures will be adapted perfectly your story and you won't have to change a project because there is no figure available with the pose or uniform you need. Don't be daunted by the quality of the resin figures out there. It is quite easy to achieve the same level or even do better, just believe in yourself!

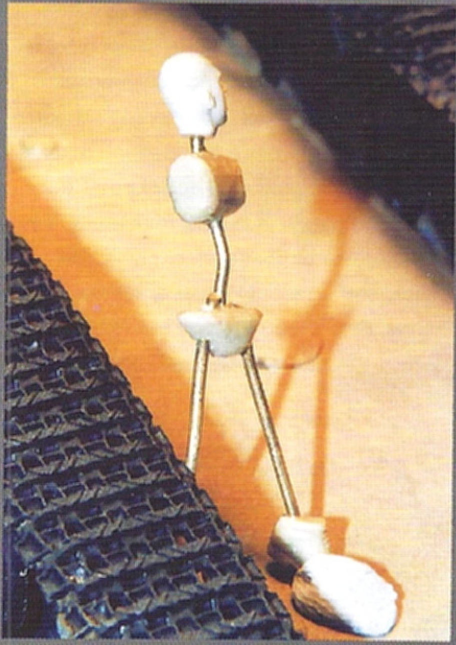
I used the traditional technique of constructing a skeleton with brass wire, a resin torso and pelvis and commercial head, hands and feet. The torso and pelvis can be carved from a scrap piece of resin or quickly sculpted with epoxy putty. For head and hands, it is best to use only top quality. I use almost exclusively Hornet heads and a mix of Hornet and Historex hands. Don't pay attention to the headgear or hair, this can be easily sculpted later

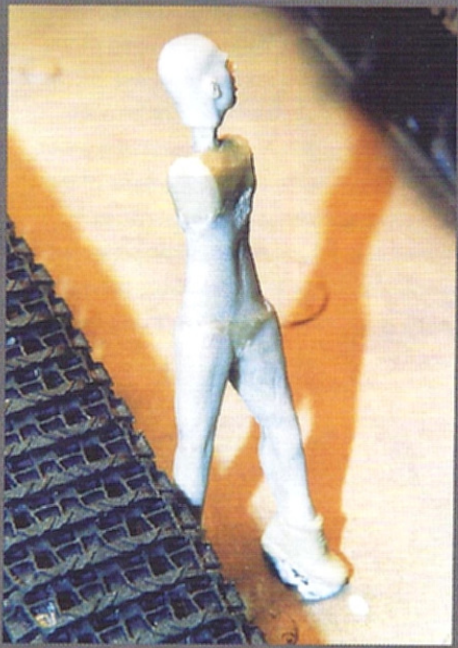


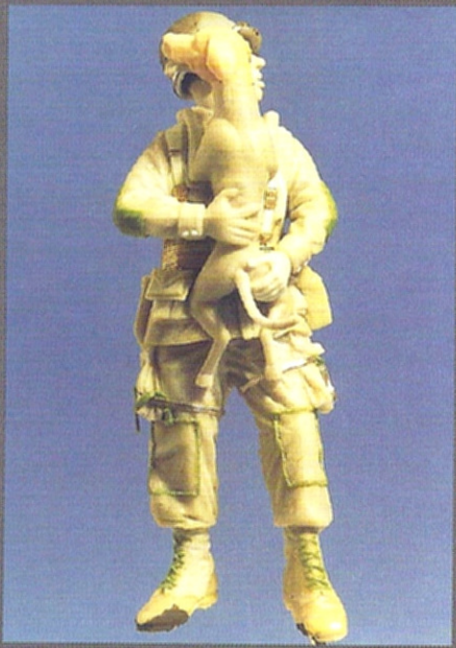


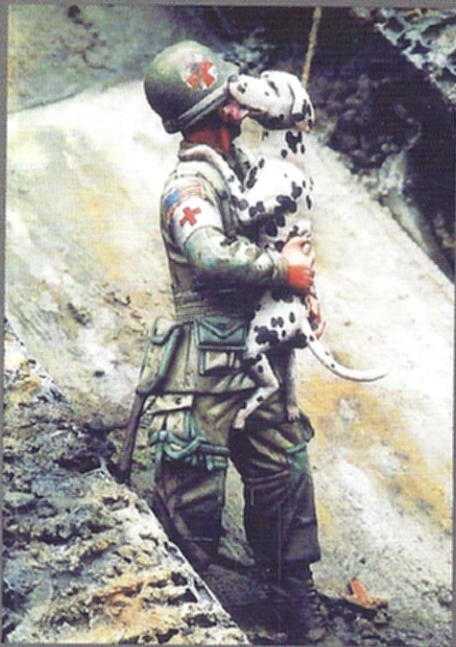


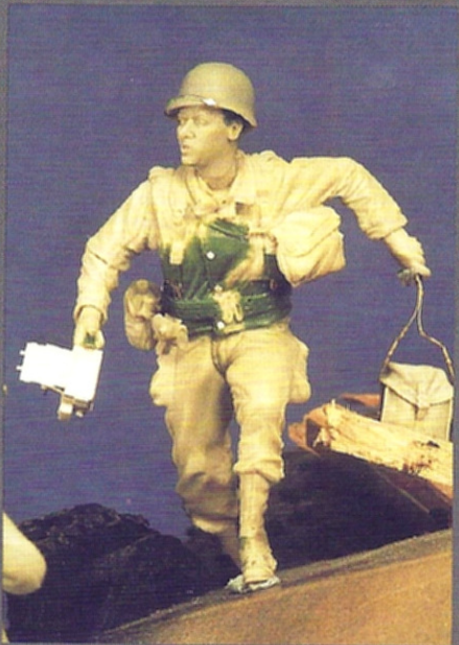


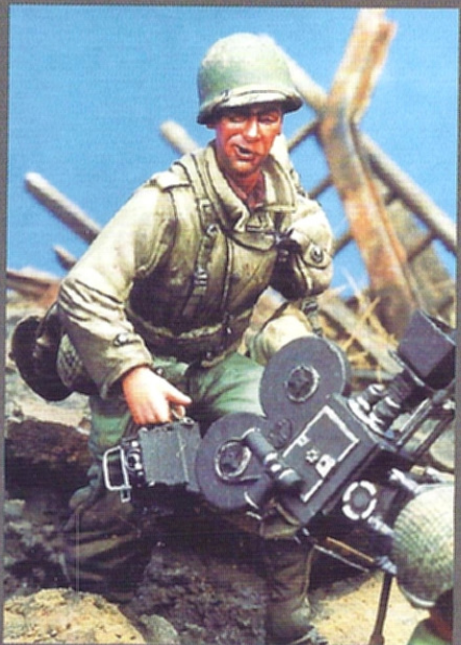












and is far less important than the facial expression. Commercial feet will often need reworking with new details but they can form an easy base to work on.
Posing the skeleton is probably the single most important step in the entire sculpting process. The greatest challenge lies in getting the pose and the anatomy correct. Take your time, study your own body and that of others and ask a friend to stand in the pose you need for your figure. Comments from other people about the realism of the pose and the body proportions can be very useful as they will have a fresh view on your figure. A good anatomy-book from the local library can help also. Don't rush this stage, even after having a good image in my mind about the pose that I want, it can still takes me several hours to transfer this to the skeleton.

With the pose complete, the time has come to start sculpting. Any good epoxy-putty can be used for sculpting, but after trying most of the current brands, my personal preferenceis for Magic Sculpt For the addition of small details I like to use Duro putty because of its stickiness.
First I "flesh out" the skeletonby adding putty to the skeleton until the limbs and torso have the volumes and shape of a naked human body. This doesn't need a lot of precision or detail. The aim is just to get a good first idea of the volumes that your figure will have, and to prevent later sculpting work having unrealistic deep folds by cutting into the body. I usually work limb by limb to avoid ruining a previously sculpted soft area. It usually takes me less than ten minutes to do one leg or arm. Sometimes it can be a good idea to first add a little bit of putty around the metal wire of the skeleton and let this harden before continuing to the fleshing-out step. This provides a much better key for the putty.

The time has come to dress the figure. For this step, we first cover the appropriate areas with putty until the volumes look right and smooth it using rubber-tipped brushes in a rolling motion. Next I press in all the folds with a toothpick which has been sanded and sealed with superglue. The folds can be feathered out easily with the rubber-tipped brushes and deepened using a needle. At the end of the sculpting session, a moistened brush (with water, or in my case mostly saliva!) can be used to smooth the surface. Use a needle to gently press in any seems or stitching details. If you are not sure where to create folds, look at the draping of real clothes and photographs of the uniforms you are trying to depict and study the sculpting style of the top quality figure sculptors.

Cutting and sanding Magic Sculpt is very easy once it has hardened so small flaws or surface irregularities can be quickly taken care of. It is always possible to carve away areas that you are not entirely happy with, and simply have a second go, any mistake can always be fixed.

Only four figures were created this way: The paratrooper with the Dalmatian dog, the cameraman, the director and the MP. The stills photographer is a mild conversion (reposing the right foot and different right hand with camera, Hornet head with Dragon helmet of an excellent Nemrod figure sculpted by Christophe Camillotte. A beautiful Hornet paratrooper was lightly converted to become the second paratrooper (different Hornet head and scarf, new right arm and a detailed Dragon helmet in the left hand).

Cameras

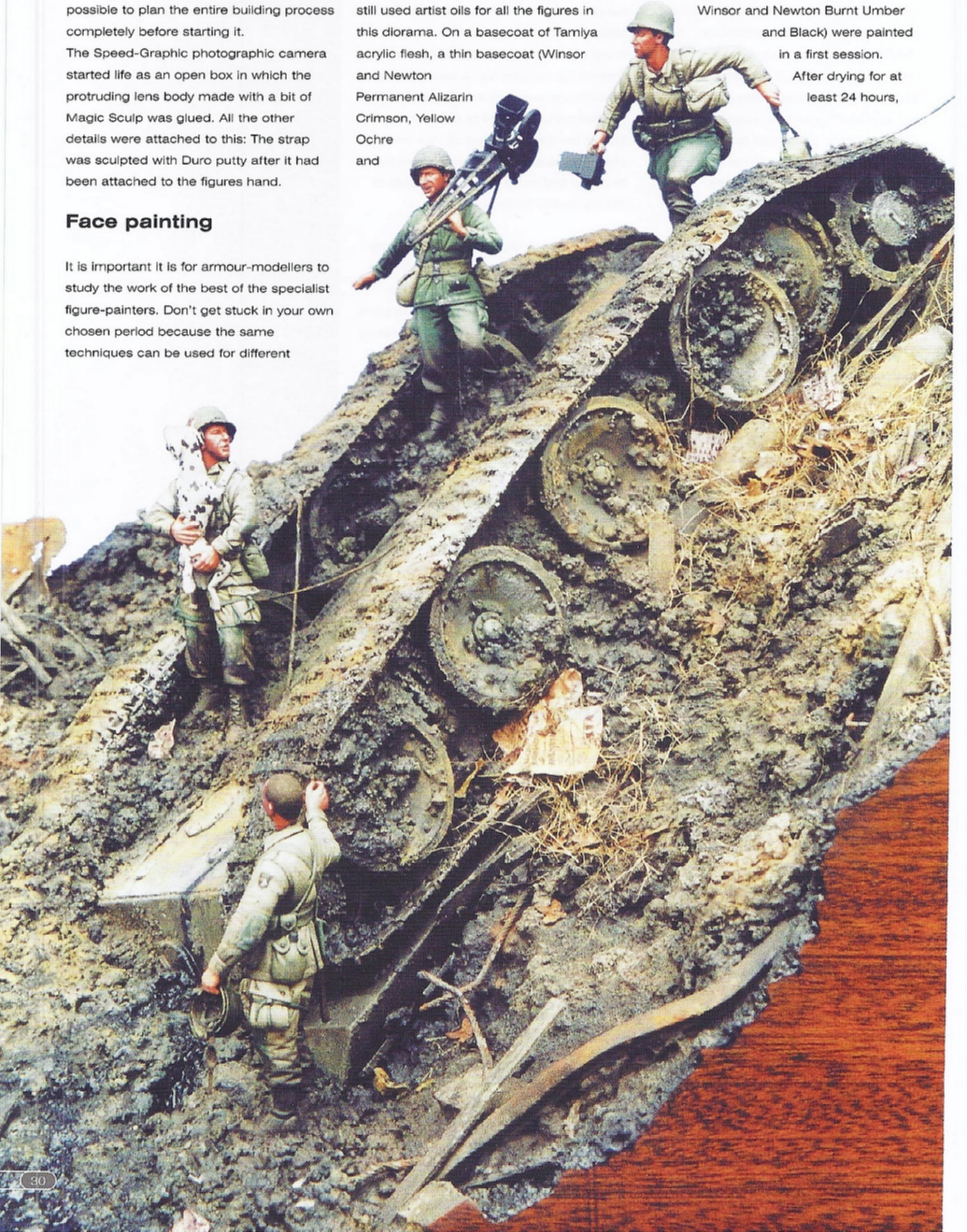
While figure sculpting usually scares armour modellers, figure modellers seem to be afraid of scratchbuilding items like these. Armour modellers are usually experienced in extra-detailing and scratchbuilding details of their vehicles. There is only one basic rule: never try to glue small details to small details! Always make things as easy as possible: start with a big basic element and glue all the small bits to that. In case of the Mitchell movie camera, the big basic element consists of the square camera body, constructed from 6 pieces of plastic sheet. The rest of the constructing involved simply the gluing of small plastic sheet, brass wire and scrap photo-etch details on top of this. It may still seem complex and fiddly, but the

continuous study of the reference photos creates a clear mental layout and makes it possible to plan the entire building process completely before starting it.

The Speed-Graphic photographic camera started life as an open box in which the protruding lens body made with a bit of Magic Sculp was glued. All the other details were attached to this: The strap was sculpted with Duro putty after it had been attached to the figures hand.

Face painting

It is important it is for armour-modellers to study the work of the best of the specialist figure-painters. Don't get stuck in your own chosen period because the same techniques can be used for different subjects. Although I am currently switching to Humbroll enamels for my skin-tones, I still used artist oils for all the figures in this diorama. On a basecoat of Tamiya acrylic flesh, a thin basecoat (Winsor and Newton Permanent Alizarin Crimson, Yellow Ochre and Titanium White) and the shadows (first Rembrandt Burnt Sienna, afterwards Winsor and Newton Burnt Umber and Black) were painted in a first session. After drying for at least 24 hours,



the highlights follow (Winsor and Newton Permanent Alizarin Crimson, Yellow Ochre and gradually more Titanium White). Another 24 hours later, the last highlights (Titanium white and Zinc Yellow) finish the face.

Working in three different painting sessions allows me to put more time into one face without losing concentration, but is important to prevent over blending of the shadows and highlights.

A five-o'clock-shadow is added with a controlled wash of black, and details like eyes and sometimes teeth are added afterwards with Humbrol enamels. Hair is painted with the same technique as the clothes.

Painting the uniforms

I use almost exclusively Humbrol enamels. The procedure starts with a solid basecoat, usually applied in two or three thin layers. This is left to dry for at least 6 hours.

Next the highlighting begins. A small but clearly defined area receives a new thin layer of the base colour. This is necessary for the blending of the highlight colours. The first highlight is applied as soon as the new basecoat is touch-dry (almost immediately). The paint is kept thick, not thinned down, and brushed on in a quick and bold way. As soon as this paint is also touch-dry, blending can start using a fine brush, slightly moistened with white spirit, the edges of the two colours are carefully feathered together. This is repeated three or for times with successively lighter highlights colours. Afterwards, the figure is set aside to dry for another 4 hours.

Shading takes a little more time than highlighting. Instead of the thick, strait-from-the-jar paint, I prefer to use thin layers of very much diluted Humbrols. Blending is avoided as much as possible and gradations are mostly achieved by superposing transparent layers. This gives me more time to experiment.

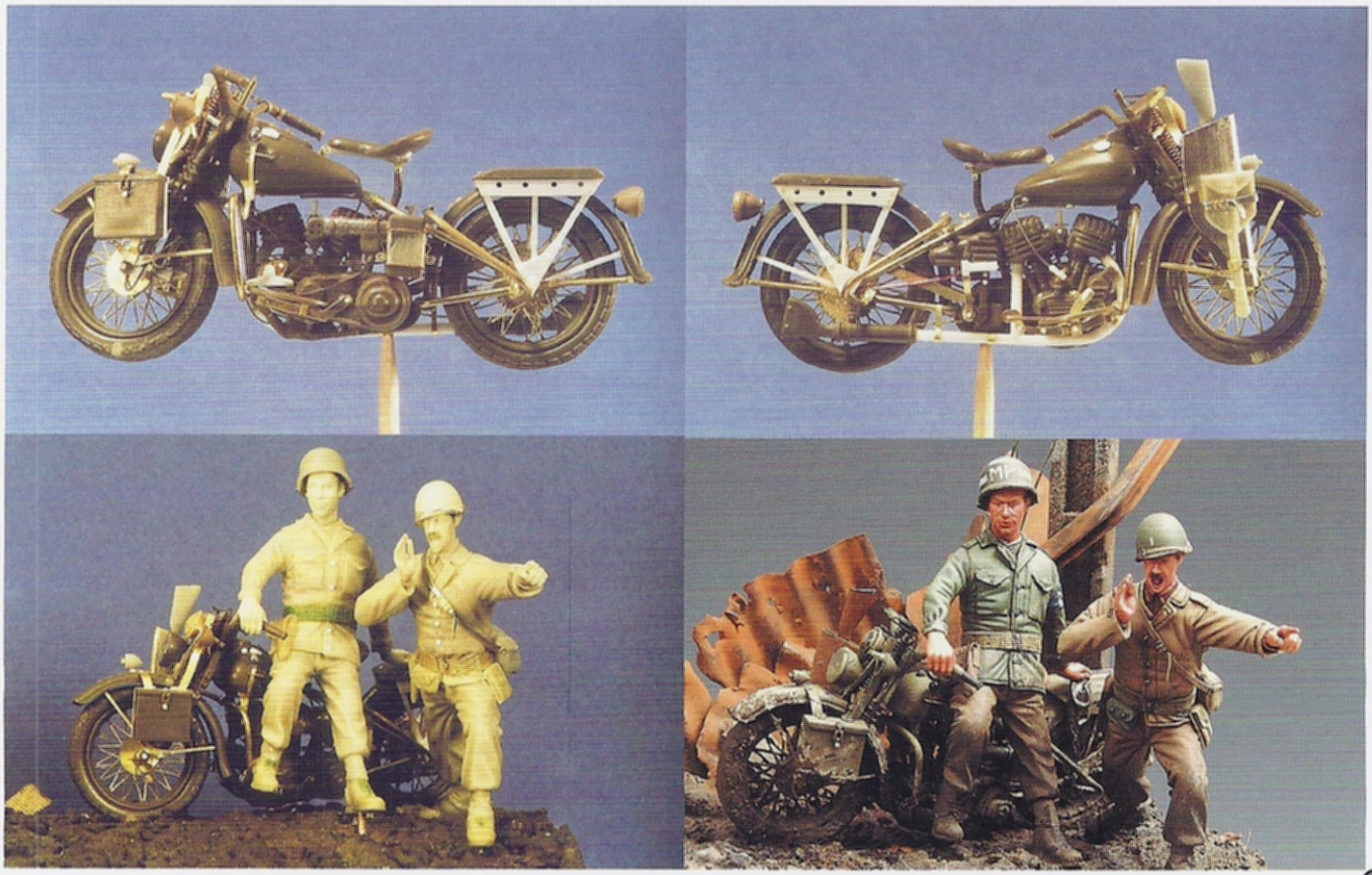
Some important notes for the less experienced figure painter, don't blend just every edge and remember that the light comes from above. Observe where transitions are soft and were they are sharp, only blend the soft ones to create contrast. As the light comes from above, the shading and highlighting is most successful if it mimics this. Instead of painting the folds dark and the higher parts light, paint the upper half of the fold dark and the lower half light.

Keep colours toned down which was not very difficult with the American drab uniforms. I try to make the tones more vivid as they get lighter although the last highlights can also have a more bleached appearance by using more bright colours. The shadows can then be toned down a lot by using mainly dark browns and black. This helps a lot in blending the colours of the figures with the rest of the scene.

Weathering should not be just an afterthought but incorporated in the painting process from the start onwards. The bottom of the trousers and the shoes received their dark and muddy tones from the start and were shaded and highlighted as such. For every piece of clothing, a different colour mix was used to vary the tones and add interest.

Harley Davidson

I have a tendency to emphasise how easy different techniques are and that it only takes a little practice and experience to combine them in a way that works. I cannot say the same about the construction of the motorcycle. It was



probably the most difficult detailing project I have ever embarked upon!

The Tamiya kit is, although basically sound, showing it's age. Many parts are too thick and most of the structural connections are simplified. The wheels are cast integrally with the fenders, which even cannot be disguised with a thick layer of mud. So the wheels were cut loose, the fenders hollowed out and the spokes replaced by some (modified) photo-etched spokes from the Aber set for the Tamiya DKW.

Many structural parts were replaced by brass rod and plastic sheet, creating more realistic joints in the process. For a small and complex model like this, getting everything to the correct size, straight and symmetrical, and at the same time getting the shapes accurate and everything sturdy enough to withstand painting, was at times quite hard and certainly very time consuming. The fact that various small details had to be added very early in the construction made handling more difficult, and this little motorcycle became a true test of my patience. After airbrushing a basecoat with Tamiya acrylics, painting followed the techniques described for the figures.

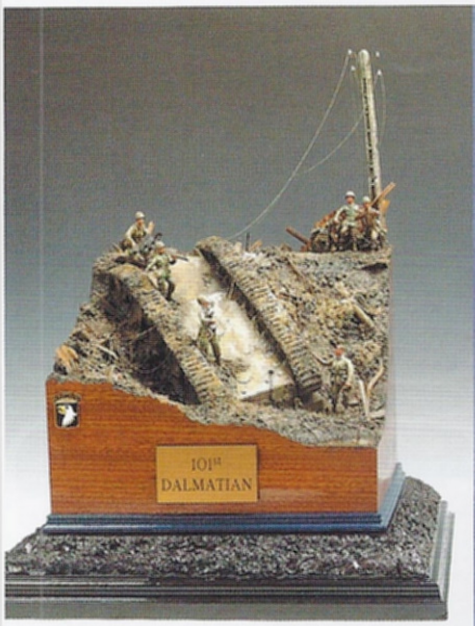
Panther and groundwork

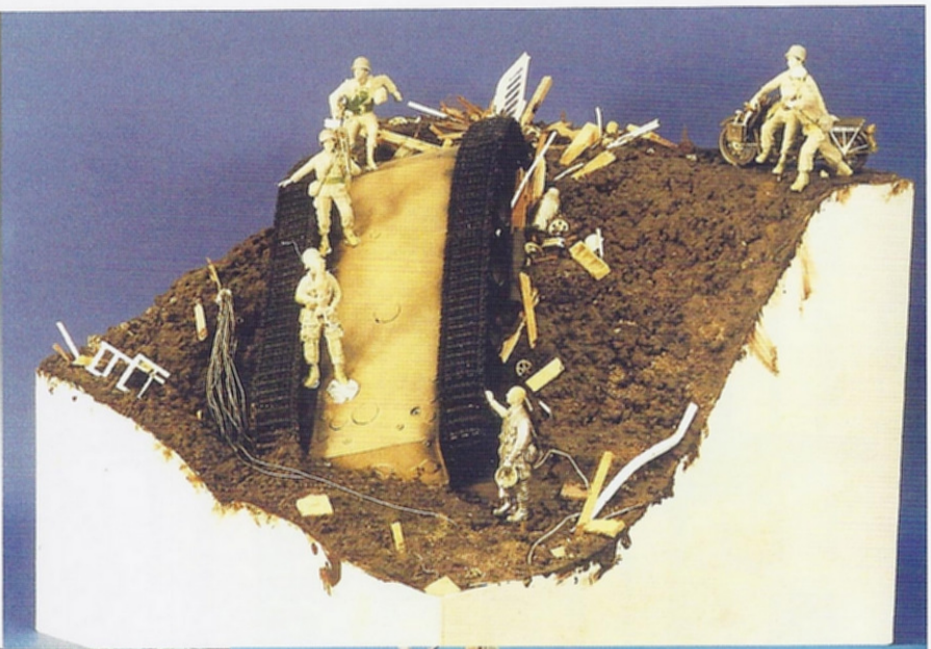
As the Panther is actually part of the groundwork and the Tamiya kit was detailed with Aber photo-etched fenders, Modelkasten tracks and some Magic Sculp weldseams. The turret was of course not used, as was most of the upper hull detail. Painting was done together with the rest of the groundwork.

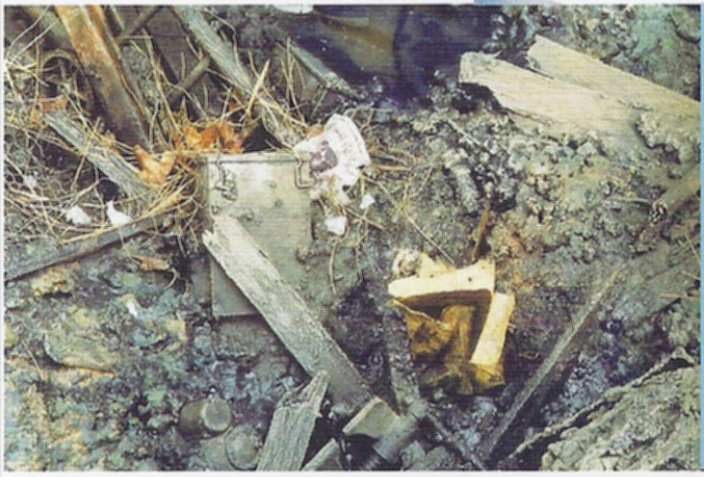
I made the mud in two steps, firstly some 'lumps' were created, and then these were added to the final mix. The 'lumps' are a mixture of ceramic plaster and enamel paint. The colour of the paint is not important as everything will be repainted later, but the proportion is. First a wet mix was made, to which slowly more and more plaster was added, mixing it up until the mix got so dry that the mixing movement made it break up into big and small lumps of coloured plaster. These were then left to dry. The next day, a new ceramic plaster/enamel paint-sludge was created, and the dried "lumps" mixed up with it. I then spread this thick sludge full of irregular lumps all over the layout of the scene (made in Styrofoam) and pressed in footprints, also embedding many accessories into the still wet mud. A lot of attention went to getting as much variation as possible in the textures. As well as the commercial accessories, plastic and brass profiles, pieces of wood, lead wire, metal cable and chain, and home-made corrugated sheets (made with pewter sheet) were added. The telephone pole came from an Ironside railroad-track-set, with added texture, damage and detailing. Some more applications of the mud mixture were made to get everything nicely sunk into the dirt and to get some different textures, talcum powder was mixed with Humbroll enamels, spread over small areas, and stippled with a stiff brush.

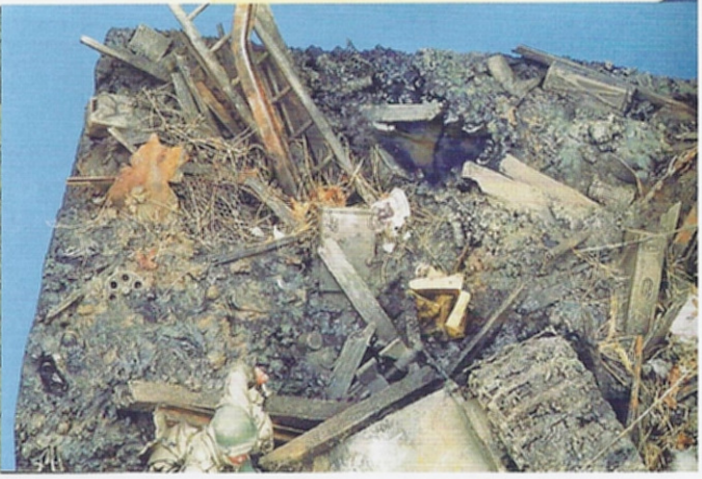
The entire scene was handpainted with Humbrol enamels, using about every brown, green, beige and grey tone that I could get my hands on, even using almost pure white. Coats of paint with a normal consistency, washes, different degrees of drybrushing were all used throughout until I felt happy with the effect. The tank and the accessories were simply painted in the same tones, only using more rusty tones for areas with metal components. Satin, gloss and high-gloss varnishes were next applied. Don't overdo this! It is far more effective to get a wet-mud-effect by darkening the tone, than by using lots of varnish. Finally, a limited amount of Mig Powders were added to dryer spots of earth, rusty I-beams and corrugated sheets to enhance the difference texture.

I used polyester resin for the water, mixing the first layers with beige Tamiya Acrylics for a muddy effect. I am not particularly happy with the fact that the surface stays sticky for several weeks, so that accumulating dust can ruin the effect. I solved this by adding a coat of polyurethane high-gloss varnish the day after the water was poured. Until now, no problems have occurred with this combination, but I cannot guarantee that no cracks will appear during the next years. My search for a transparent resin of









which the surface dries glass-hard within 24 hours continues...

To create even more variation in texture and depth in the groundwork, I glued straw that was flying around and collected in the corners, newspapers, posters, small leaves, small scraps of paper and a dirty cardboard box to the groundwork, and worked it into the mud.

Finally, the pins of the figures were inserted into the groundwork, fixed with two-part epoxy glue, and some more mud was added around the feet. Finished!

Finishing

Or not completely finished yet? At competitions, I notice often that with the exception of most figure-modellers we fail to put the amount of care and thought into the bases of our dioramas that is worthy of the effort invested in the diorama itself. Needless to say, an ugly or ill-fitting base will detract from your model, while an excellent base can make it really stand out. It is very important to remember that any base needs a certain amount of mass to make the groundwork on top look realistic. A thin wooden board just doesn't work. So, make sure to select a base high enough and finish it to the highest standard. If you can make your base fit visually with the story that is told in the diorama, even better. This time, I tried this by mimicking the texture of the mud on the bottom of the base, creating a rhythm of heavy texture (bottom of base)-smooth wood (vertical sides of base)-heavy texture (groundwork).

Conclusion

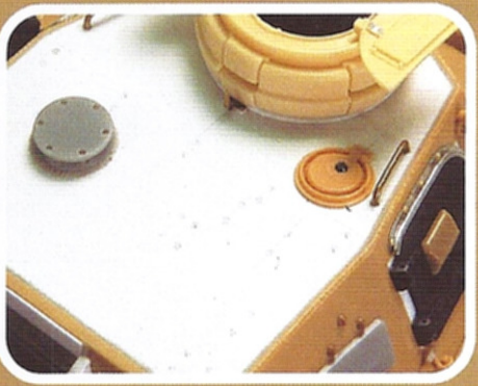
This really was a fun project for me, mainly because of the many new challenges. I had only very limited experience in figure-sculpting before starting this dio, and getting such an amount of mud look interesting certainly kept my interest alive until the end. It really worked for me to try and do something a little different, and I suspect it might also for you. And remember: don't get stuck in your own little field of modelling, but open up and look around!

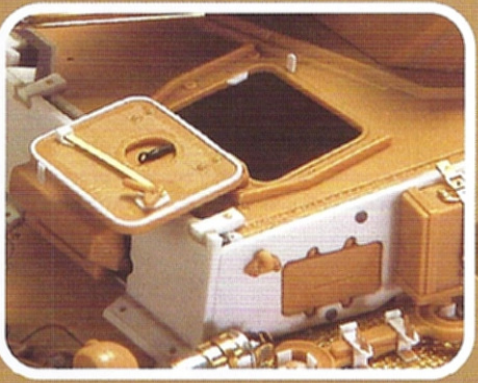
'Spike'

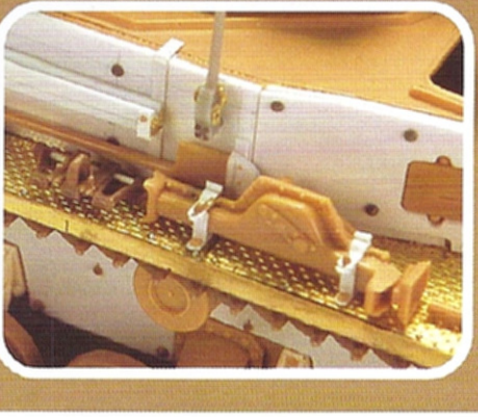
Modelling the Panzer IV Ausf.E

Part One - Construction

By Tom Cockle







In July 1939, a contract to produce 223 6.Serie Begleitwagen, designated as the Panzerkampfwagen IV Ausf.E, was awarded to Krupp-Grusonwerk. The order was reduced to 206 in March 1941 and production ended in April 1941 with 200 units completed.

Among the improvements introduced was a redesigned drive sprocket and roadwheel hubcaps. The Fahrersehklappe 30 and an improved commander's cupola were adopted from Panzerkampfwagen III production along with a fume extraction fan in the turret roof. Turret construction was simplified by welding a single rolled plate on the back of the turret eliminating the bulge under the cupola.

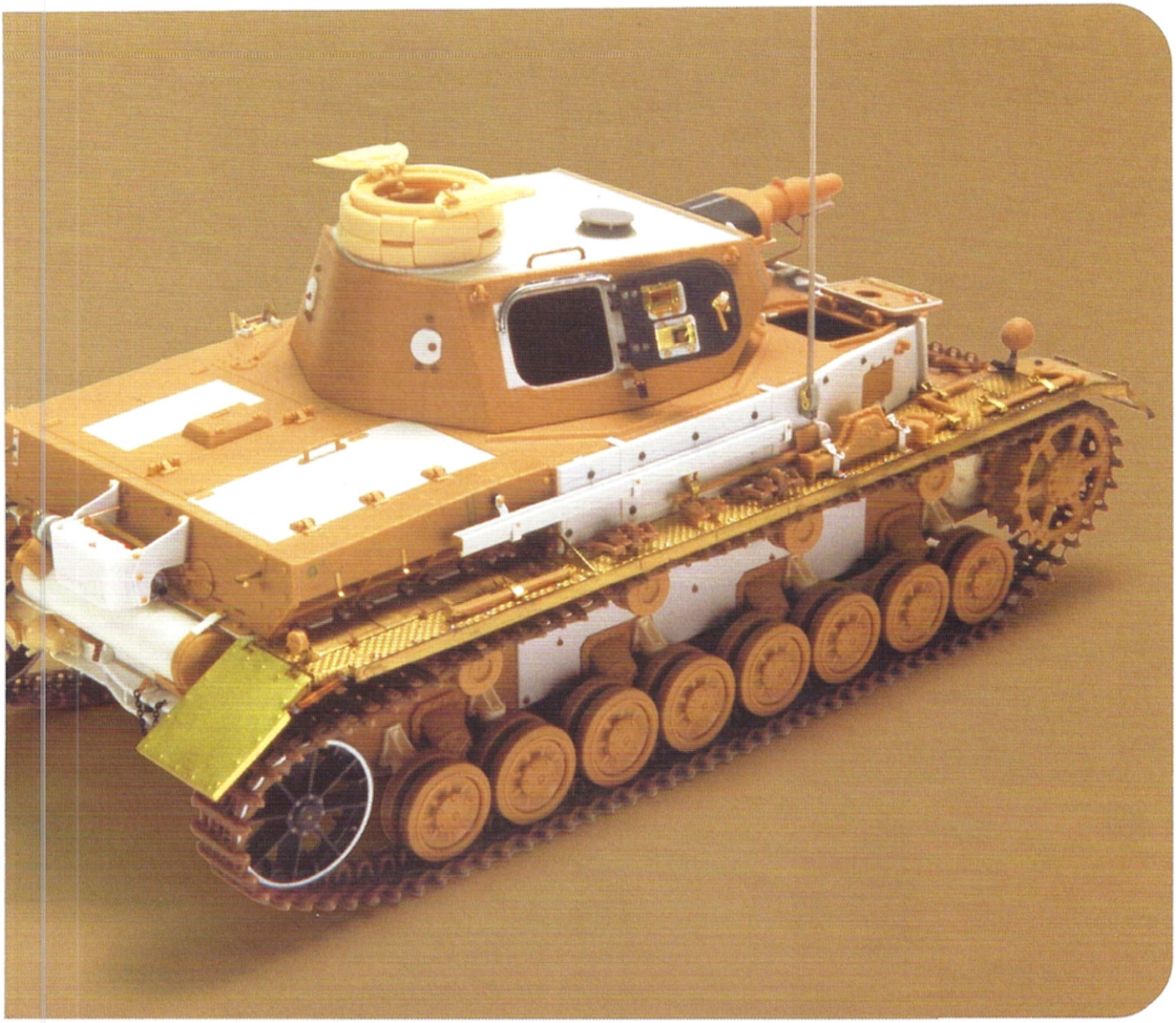
Armoured protection was improved by adding 30mm supplemental armour plates, called Zusatzpanzer, to the front of the superstructure and 20mm plates to the sides of the superstructure and the lower hull beside the crew compartment. The smoke candle rack was now mounted on the rear superstructure plate protected in an armoured housing.

In early 1941, a few were converted to Tauchpanzer and ten converted to 'Tropen' for employment in North Africa. Turret stowage bins also began to be fitted around this time. Except for the ten sent to North Africa, the rest saw action in the Balkans and on the Eastern Front.

With only 200 vehicles produced, it's no wonder that operational photos of them are scarce. As far as is known, there are no survivors but fortunately, a number of Panzerkampfwagen IV Ausf.D were also fitted with the Zusatzpanzer and at least two can be seen today, one at the Tank Museum at Bovington and the other at Aberdeen Proving Grounds in the U.S.

The Kit

The obvious choice was the new Tamiya Panzerkampfwagen IV Ausf.H. All the basic components are included and the detail is good, particularly the drive sprockets. You will also require some selected components from the old Tamiya



Panzerkampfwagen IV Ausf.D kit that will be discussed later. Another option, if you're not into scratchbuilding and can still find one, is the Coree resin conversion for the Dragon Panzerkampfwagen IV Ausf.F1 kit. I had this combination but after closely examining it, decided I could do a better job myself and at the same time make it more challenging. As the right side of the superstructure beside the radio operator was set back, the kit mudguards have to be removed necessitating replacement with an Aber photoetch brass set.

Construction Begins

Early on in the project, I decided to use the new Model Kasten SK-57 38cm workable tracks. Apparently, we have been misled all these years believing that the Panzer IV ever used a 36cm track as was previously espoused in the Achtung Panzer book on the Panzer IV and Walter Spielberger's 'Panzerkampfwagen IV Und Seine Abarten'. More current research by Tom Jentz in his Panzer Tracts No.4 reveals the truth that only 38cm and 40cm tracks were ever fitted to Panzer IV's. This is also supported in Spielberger's new 'Begleitwagen Panzerkampfwagen IV'. The Model Kasten tracks are beauties and, other than a small investment in time and a large investment in cash, go together well and look great once they are finished. They also come with an optional lower height, open guide tooth that Model Kasten indicate was used on the Panzer IV Ausf.A although I have seen them fitted on the Panzer IV Ausf.C as well. Coincidentally, this was the same type of spare track carried by my subject vehicle on the glacis plate.

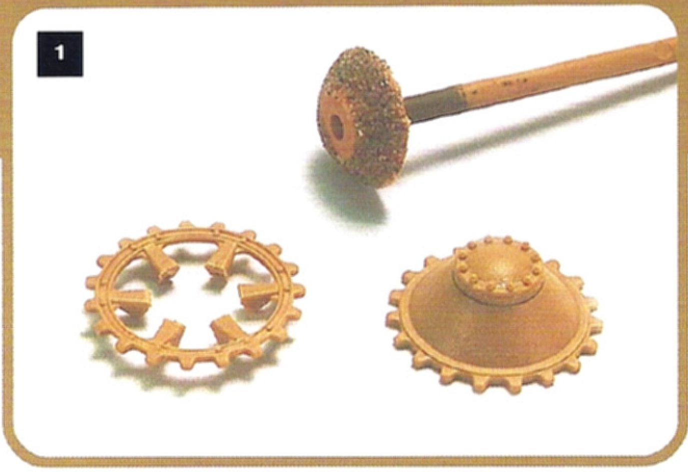
The first major problem to be solved is how to mate the kit drive sprockets with the Model Kasten tracks. My first attempt was to simply force the spokes in the outer half of the drive sprocket back in line with the hub. This slightly increased the width across the spokes creating a noticeably hexagonal shape to the outer ring. I ended up removing the center hub, forcing the spokes back and then reshaping the hole with a special sanding tool I made as shown in photo 1, to mate with the inside half of the drive sprocket. Any gaps were then filled with Zimm-It-Rite epoxy putty. The inaccurate sprocket perimeter bolt heads were removed and replaced with bolt heads shaved from the spare rear plate in the kit. The nuts and bolts visible on the inside half of the drive sprockets are from a Grandt Line No.127 set.

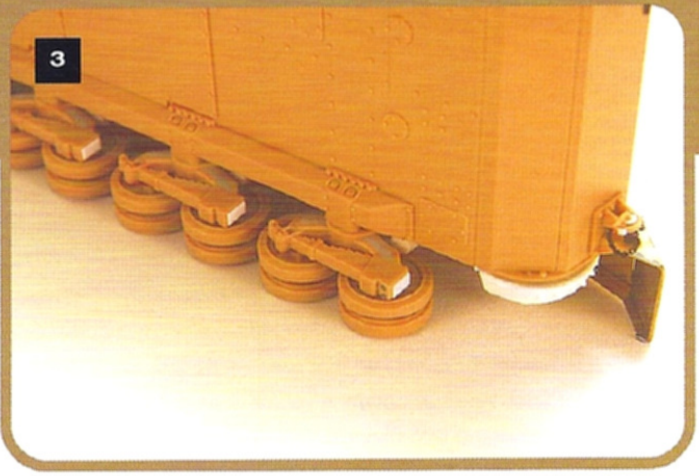
The final drive housings provided with the kit are not accurate for the Ausf.A to Ausf.G and were replaced with resin copies, seen in photo 2 and mastered by my good friend Steve Van Beveren. They are now available from Tiger Model Designs. Care must be taken when gluing them to the hull, as they should follow the curve of the lower hull side extensions projecting slightly downward.

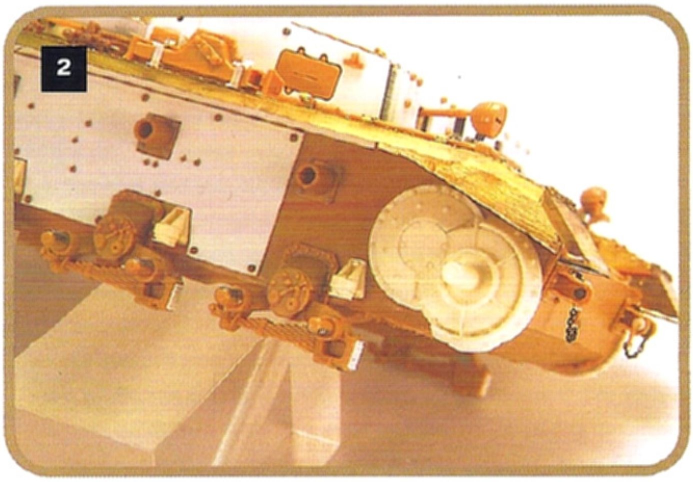
I replaced the roadwheel bump stops with more accurate resin copies from a master I made based on a modified kit part. The Panzerkampfwagen IV Ausf.D at APG has three different types of roadwheels on it, one having three short welds around the outer edge, one with four welds and one with no welds at all. I added a variety of welds using epoxy putty. The suspension arms also have two different types of front end. One has the ends of the leaf springs visible and one has a protective cover over the end of the leaf springs. The exposed leaf springs were made by scribing a piece of .015" x .250" styrene strip with closely spaced parallel lines. These were then cut into narrow strips and glued to the assembly. Grandt Line No.127 nuts and bolts were added and the hollowed out backs were filled with epoxy putty as shown in photo 3.

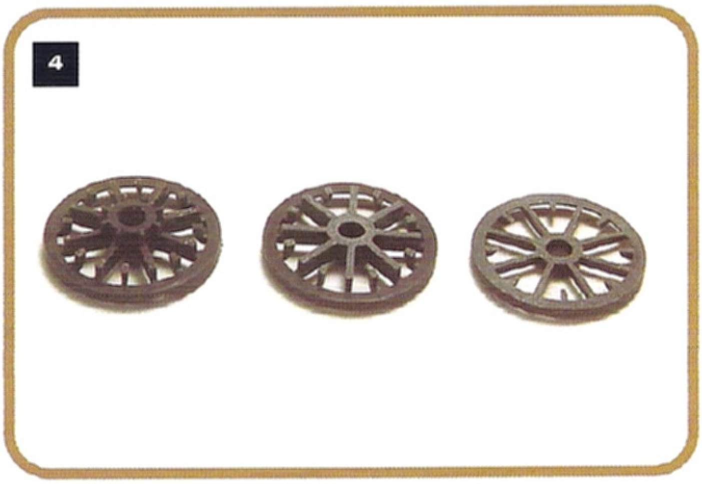
There are significant differences in the rear plate of the Ausf.E and Ausf.H that required a new one to be constructed from sheet styrene. The main plate itself is .040" thick and it should project up above the hull sides .060" because you have to replace the thickness of plastic that is removed along with the kit mudguards. I added various sizes of styrene strip to reproduce the stiffeners on the rear plate along with Model Kasten cone shaped bolt heads. Where the plate extends forward under the hull, rivet heads shaved from an old Monogram Lee kit were glued on. Towing pintles for the back and front were made from .050" diameter styrene rod with handles made from the kits spare engine deck grab handles and fine 40 link per inch chain. The chain is a little oversized but it still looks more realistic than the best photoetch brass chain in my opinion.

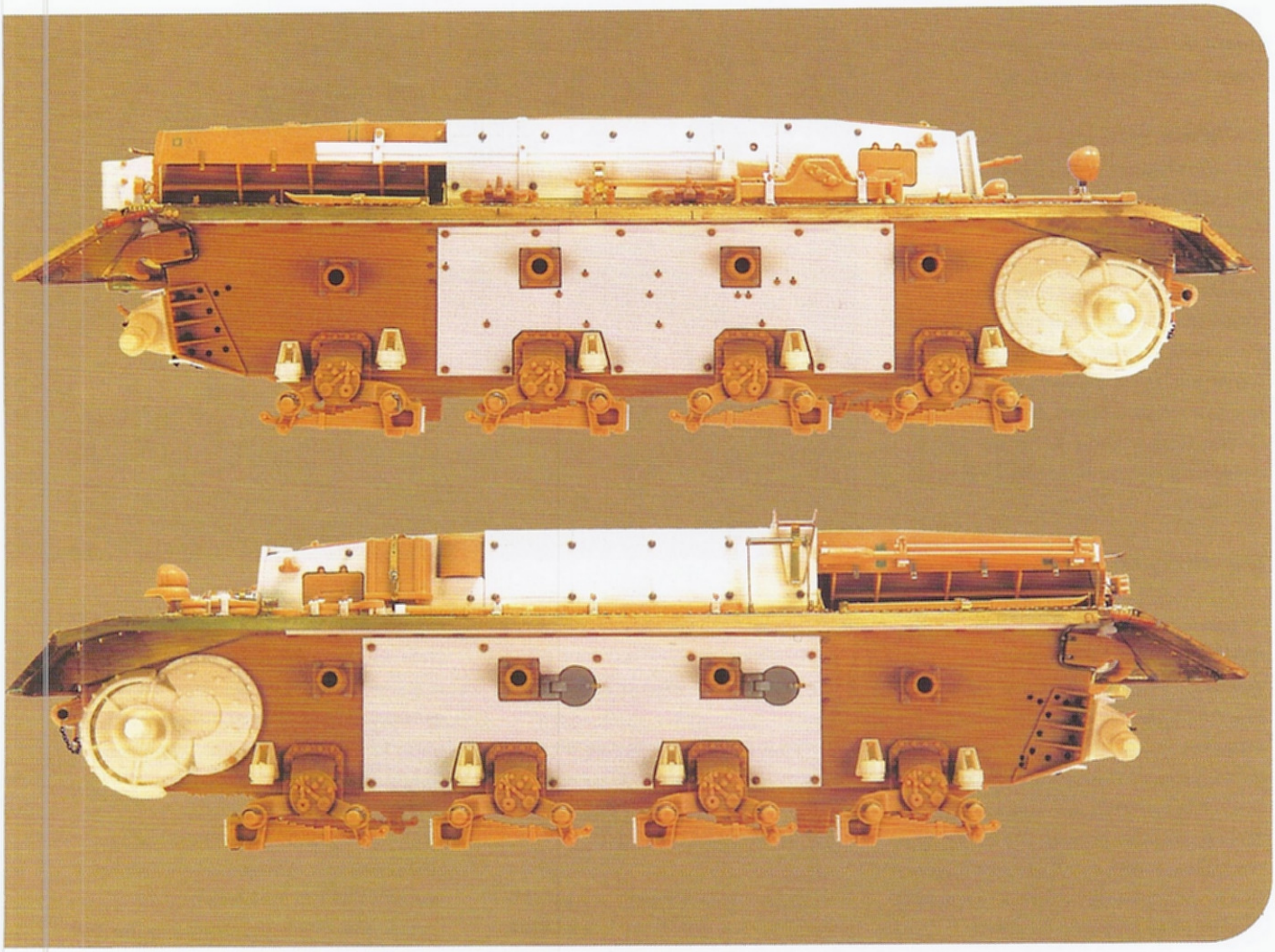
The early idler mounts are also resin copies mastered by Steve and now sold by MIG Productions with their


1


3


2


4



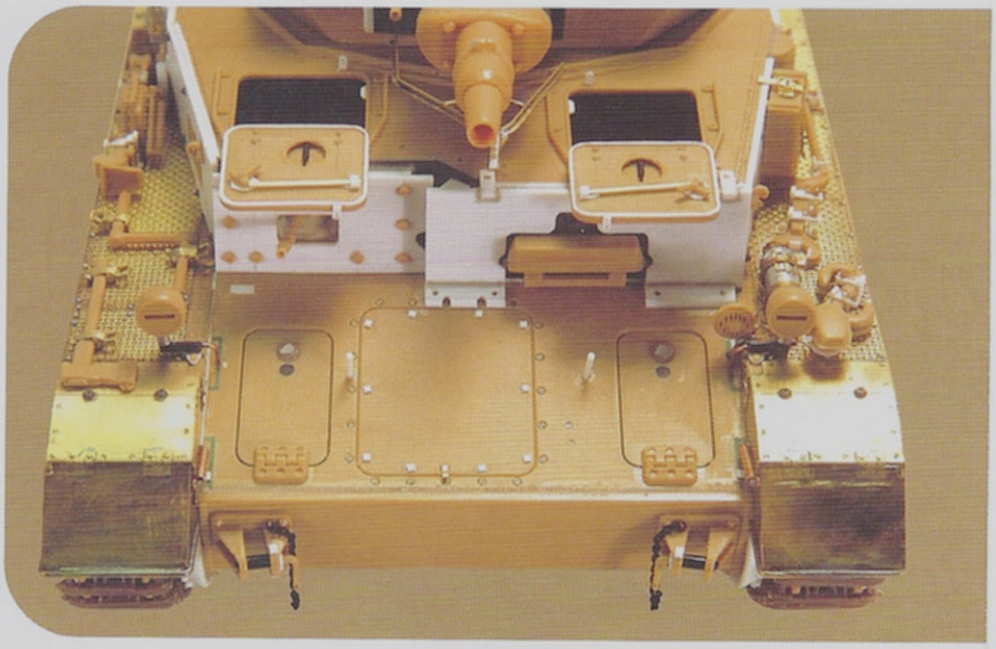
Panzerkampfwagen IV Ausf.F2 conversion. The octagonal adjusting nuts are my own castings with small vanes made from .010" x .020" styrene strip. With these in place, the idler can now be mounted. These will be the first parts taken from the old Tamiya kit. Curiously, Tamiya included two outer halves of the idler with a smaller diameter hub (part D4) in their kit along with two complete pairs designed to accommodate the poly cap. You will need four of the smaller hub parts from two kits. First, take one half of the kit part and remove the raised center part so that it looks like the one in the centre of photo 4. Then sand the other half down from the inside until it is flush with the outer ring like that shown on the right. Drill out the centre with an appropriately sized drill bit and glue it to the other half. Some sanding and filing of the ribs will need to be done when the glue dries. Another outer ring needs to be added on each side from .010" x .025" (HO scale 1 x 2) styrene strip. As I write this article, Dragon have just released their new early Hummel and they have included these early idlers in that kit which, depending on the version you want to build, may end up being spare parts. Problem solved.

Just in front of the idler mounts on the sides of the hull, the undersized moulded on rivets on the reinforcing plates were removed and replaced with round head rivets taken from an old Tamiya Lee kit. For the same reason, the bolts on the return roller mounts were replaced with Grandt Line No.127 nuts and bolts.

A new muffler was made from styrene tube and the kit ends. The triangular reinforcing gusset under each end was cut out and replaced with .010" styrene sheet to make room for a bolt head. The small turret traverse muffler was made from aluminum tube, 14 gauge copper wire and styrene strip brackets as seen in photo 5.

The next step was to add the glacis plate to the front of the hull after carefully removing it from the upper hull moulding. Tamiya's kit has the interlocking weld detail moulded in which was filled with Squadron Green Putty and sanded smooth. The moulded on bolt heads around the square transmission hatch were removed and replaced with pieces of .025" x .025" x .010" square styrene. The recessed screw heads around the perimeter were filled with Royal Model photoetch brass screw heads taken from their set No. 34. These details are shown in photos 0 and 7. It is really a shame that Aber can't give you these with their detail sets instead of a lot of the useless parts they include such as idler mounts. Come to think of it, I can't recall ever having seen those actually having been used by anybody!

The holes in the two hatches for locating the armoured brake cooling housings were filled with styrene rod fixed with cyano glue and shaved flush when dry. New hatch locks were made from two of the tiny discs included in the Model Kasten Panzer IV roadwheel set that were intended to allow the wheels to rotate on the axles. Three tiny screw heads were scribed into them and a small swivel plate added from a Dragon StuG.III glacis plate (now that would be a welcome part Aber could provide).



Bending Brass

As I mentioned earlier, the surgery to the superstructure in front of the radio operator's position will require the kit fenders be replaced with a photoetch brass set. I used Aber's original set on a Panzer IV Ausf.D I recently completed which consisted of many parts and were very complicated to build. Thankfully, Aber has come up with a new simplified version with a one-piece frame that is much easier to build. They provide a couple of additional strips needed to raise the height of the fenders to compensate for the thickness of the plastic kit fenders but I found it easier to simply add a .060" x .060" styrene strip along the top edge of the lower hull.

One complaint I have with the Aber fender set is that they don't give you everything you need to build a complete fender. The front hinged part is not included and so you need to buy a different set (A35008 for the Panzer IV Ausf.F1, F2 in this case) to finish off. The new fender set gives you the hinged side engine air intake doors but only includes doors with the notch cut out for the side skirt brackets found on later versions. They are also too wide to fit and so I made new ones form brass shim stock.

AFV Modeller provided a basic tutorial on working with brass in issue 10 that will be helpful if you haven't already developed your own techniques. They vary little from my own other than I use a butane pencil torch instead of an electric soldering iron.

Detailing the tool stowage was left until the last to avoid unnecessary breakage.

The Superstructure

The first task is to remove the moulded on grille on the left side of the engine deck and glue in a piece of .030" styrene sheet as shown in photo 10. A lot of care is required to get a good fit and a seamless joint. The right side hatch was replaced with a piece of .030" styrene sheet. The hinges and locks were shaved from the kit hatch and glued in place with the rearmost hinge being relocated slightly forward of its position on the kit.

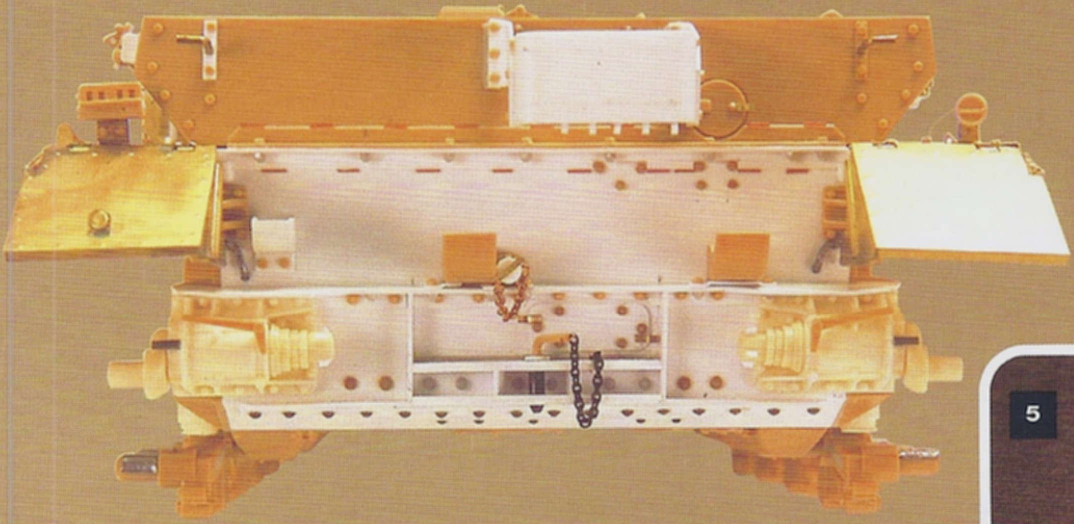
The stepped front plate was cut from the old Tamiya Panzer IV Ausf.D hull and used as a guide for cutting the superstructure roof back. I didn't use the separate front plate in the Ausf.D kit because I was going to be using an MG mount that I made and cast in resin and the driver's visor needs to be replaced with the new kit one anyway. At the same time, the sloping right side of the superstructure was cut away from the roof and a small sliver of the roof removed to allow the side to be bent inward to line up with the lower hull. The kit driver's visor was tweaked with some Model Kasten conical rivet heads and glued to the front plate and two periscope holes were drilled in above it. Take care to center the holes as Hilary Doyle's drawings show them offset to the right when photographs clearly show them to be centered.

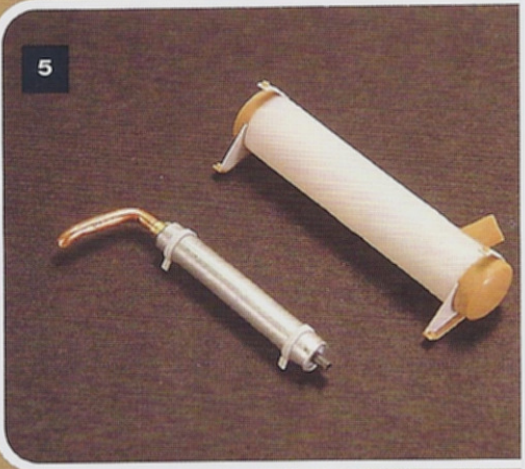
Before gluing on the rear plate, the two side grilles had eight small semicircular notches filed into the bottom corresponding with the location of the side door hinges. I first cut a notch as a guide and then expanded it carefully with a round needle file. With these in place, the superstructure and lower hull were glued together.

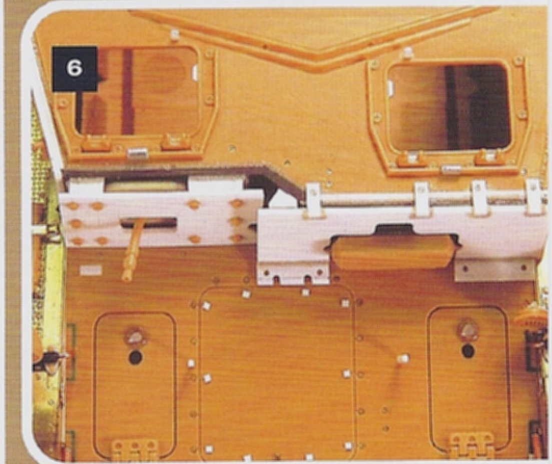
Zusatzpanzer

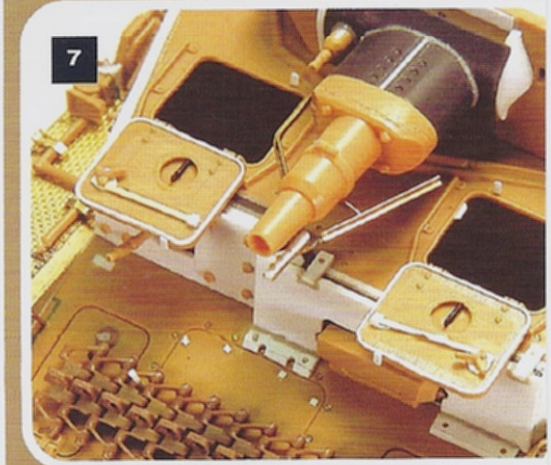
The most difficult challenge of building this model was getting detailed photographs of the applique armour plates added to the upper and lower hull. Although I received many helpful responses to my Missing-Links request, I was only able to complete them after taking the necessary photographs myself of the newly restored Panzer IV Ausf.D at Aberdeen Proving Grounds. These photographs are reproduced elsewhere in this issue for your reference.

On the real vehicle, the upper and lower hull side plates were 20mm thick and the front were 30mm thick. In 1/35 scale, this




5


6


7

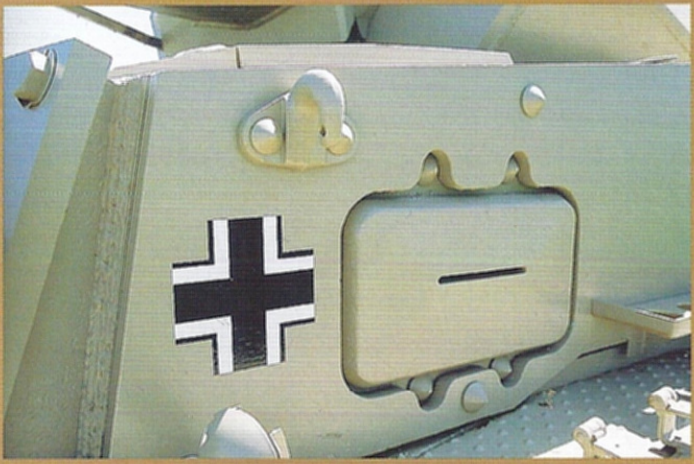
is .022" and .033" respectively but since these are not available in styrene sheet, I simply used .020" and .030". The lower hull side plates are tricky to reproduce and I made a paper template and test fitted it several times until I got them to fit properly around the roadwheel mounts, bump stops and the fuel filler caps. While I was working on this, I realized that the fuel filler caps on the Tamiya kit represent a later design and fortunately I was able to retrieve two correct Dragon ones from my spare parts bin. There are numerous small conical rivet heads located on the right side of the lower hull armour plate. The smallest size Model Kasten rivets were used for these and all the rest were the mid-sized heads. Small lockwasher pinholes were drilled out above each small rivet with a .0135" drill bit. These are quite evident in the photos of the Panzer IV Ausf.D at APG.

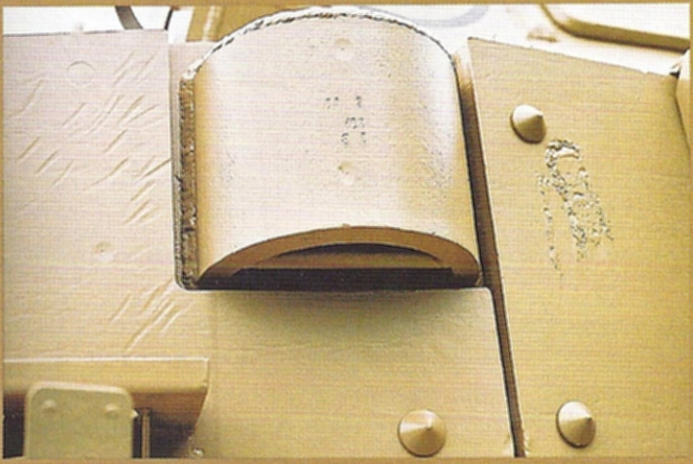
The outline of the vision flaps on the upper side plates was drawn on the sheet styrene with a pencil and the four corners and four rivet heads drilled out. A hole punch was used to make the initial hole and the remainder carefully trimmed away to obtain a good fit.

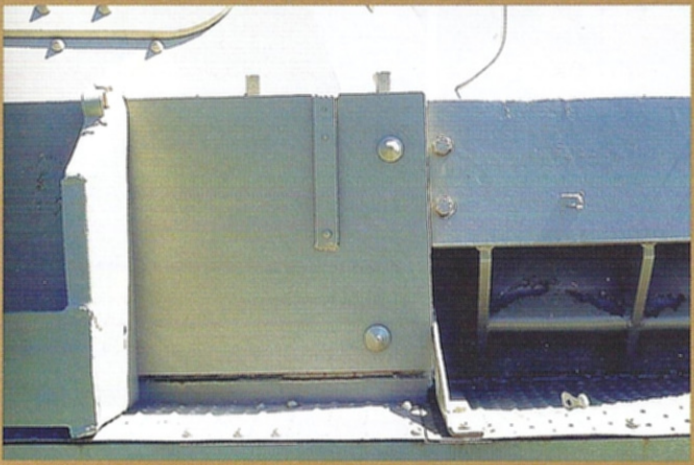
The photos of the Panzer IV Ausf.D accurately show the applique armour in front of the radio operator's position that was used for the Ausf.E. It was spaced away from the front plate because of the thickness of the MG mount and these spacers were made from .040" x .080" strip. The bolt heads were taken from the kit supplied applique armour for the early Ausf.H with the bolt ends removed.

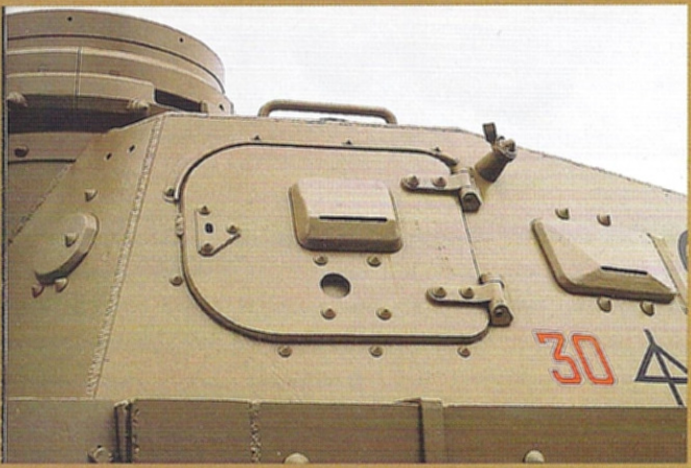
The armour plate in front of the driver's position on the Panzer IV Ausf.D was different than that used on the Ausf.E because the driver's visors were quite different. This one was a little trickier to make as there are four interlocking attachments along the top and two diagonal gussets back to the diagonally sloped front plate. After experimenting with trying to scribe in or melt the joints for the top brackets, I ended up notching the plate and created the welds with epoxy putty. The plate was glued in place and the bottom extensions added. Royal Model small screw heads finished it off nicely.

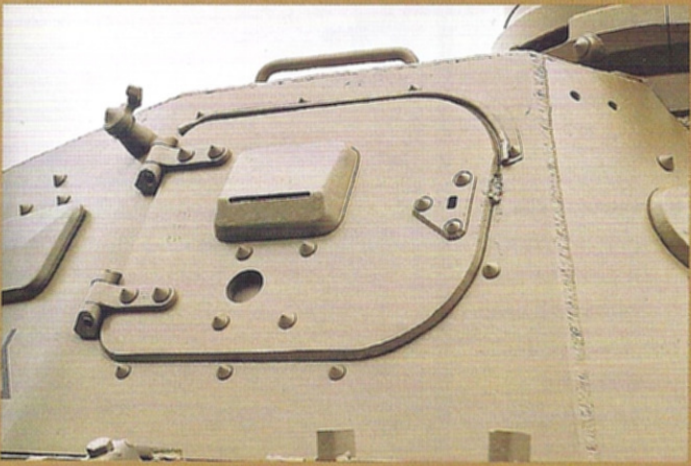
Since both the radio operators and driver's hatches were to be left open, the inside of the hatches needed some detailing as shown in photo 13. There are some excellent photographs on page 36 of Nuts & Bolts Vol.13 on the Flakpanzer IV of open hatches with the signal port fitted that provided the necessary information. A cautionary note here though – the hatches have been installed, probably during restoration, on the wrong sides. The signal port on the radio operator's side should be slightly off centre to the left. The one in the

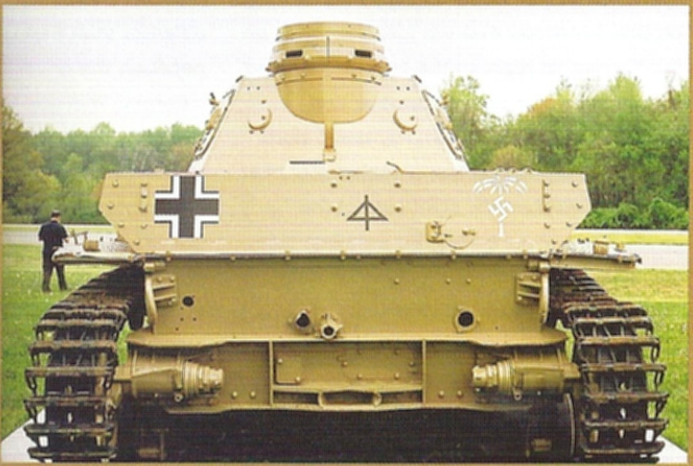


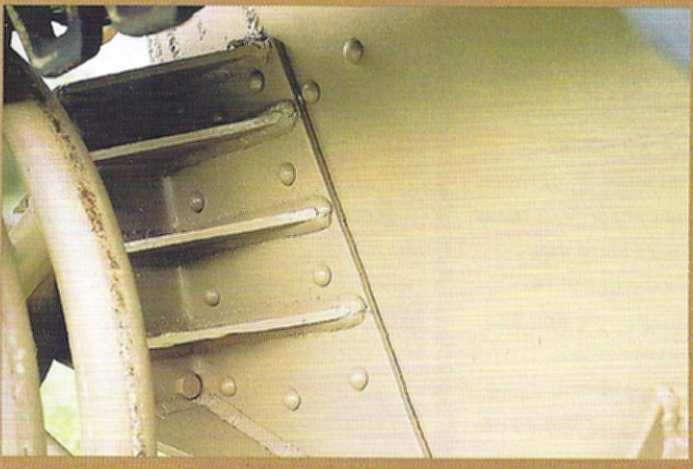


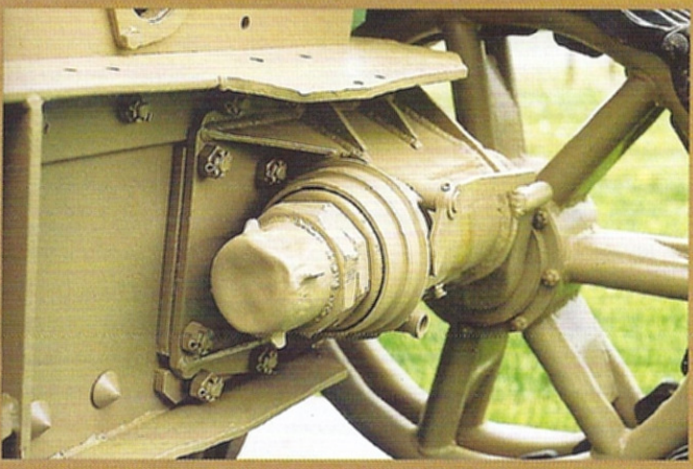


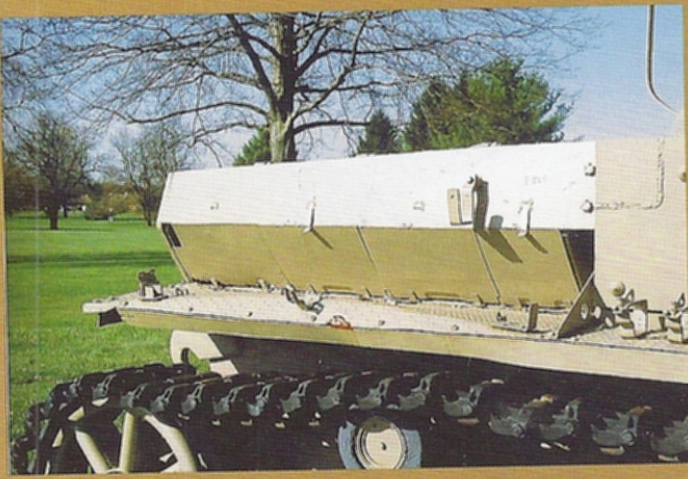

30

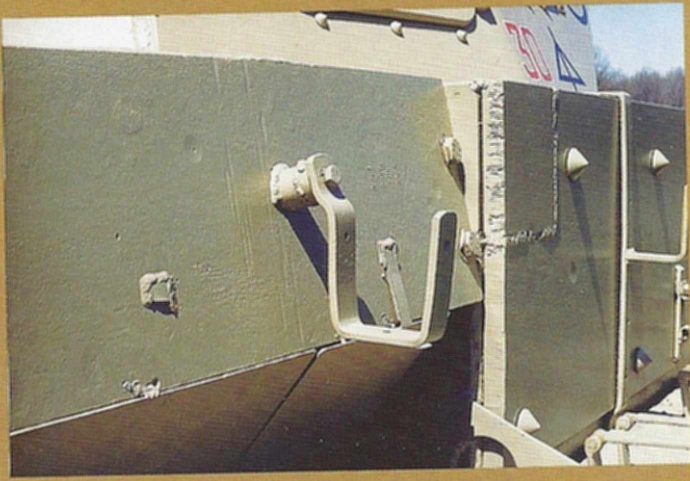


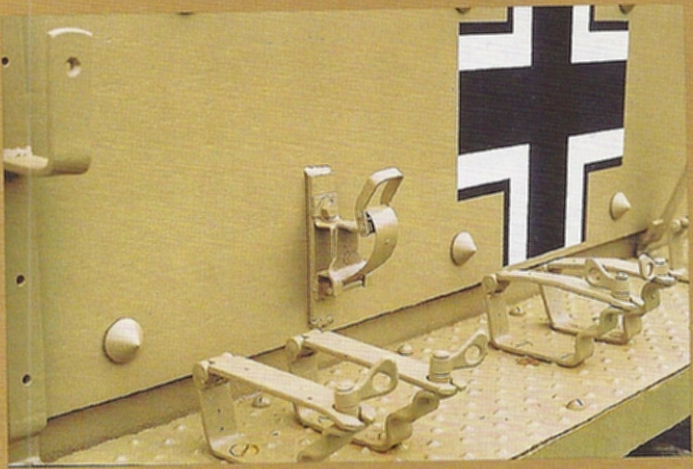


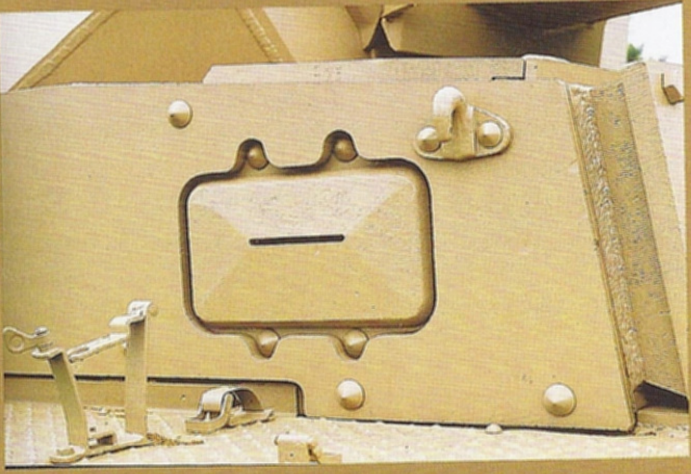


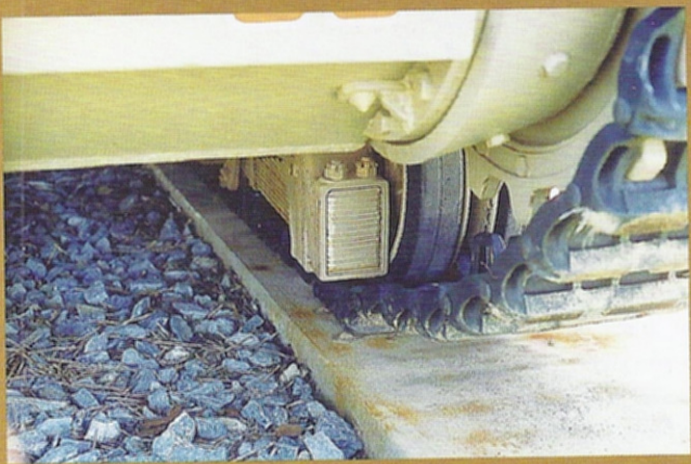


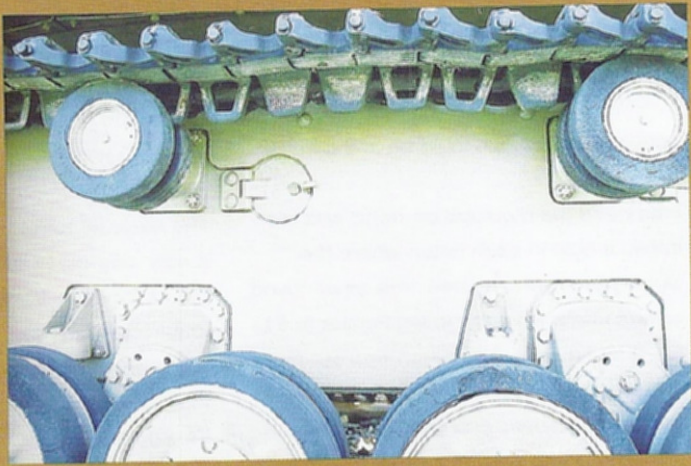


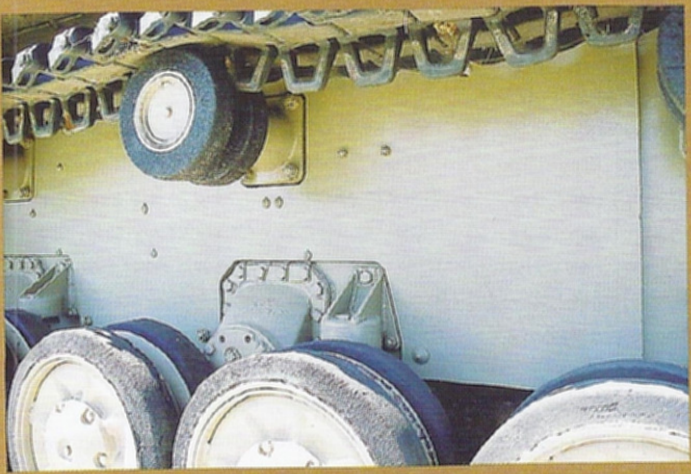


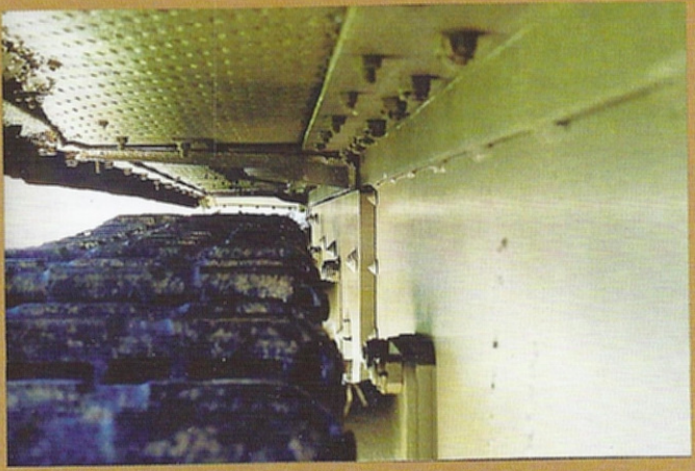


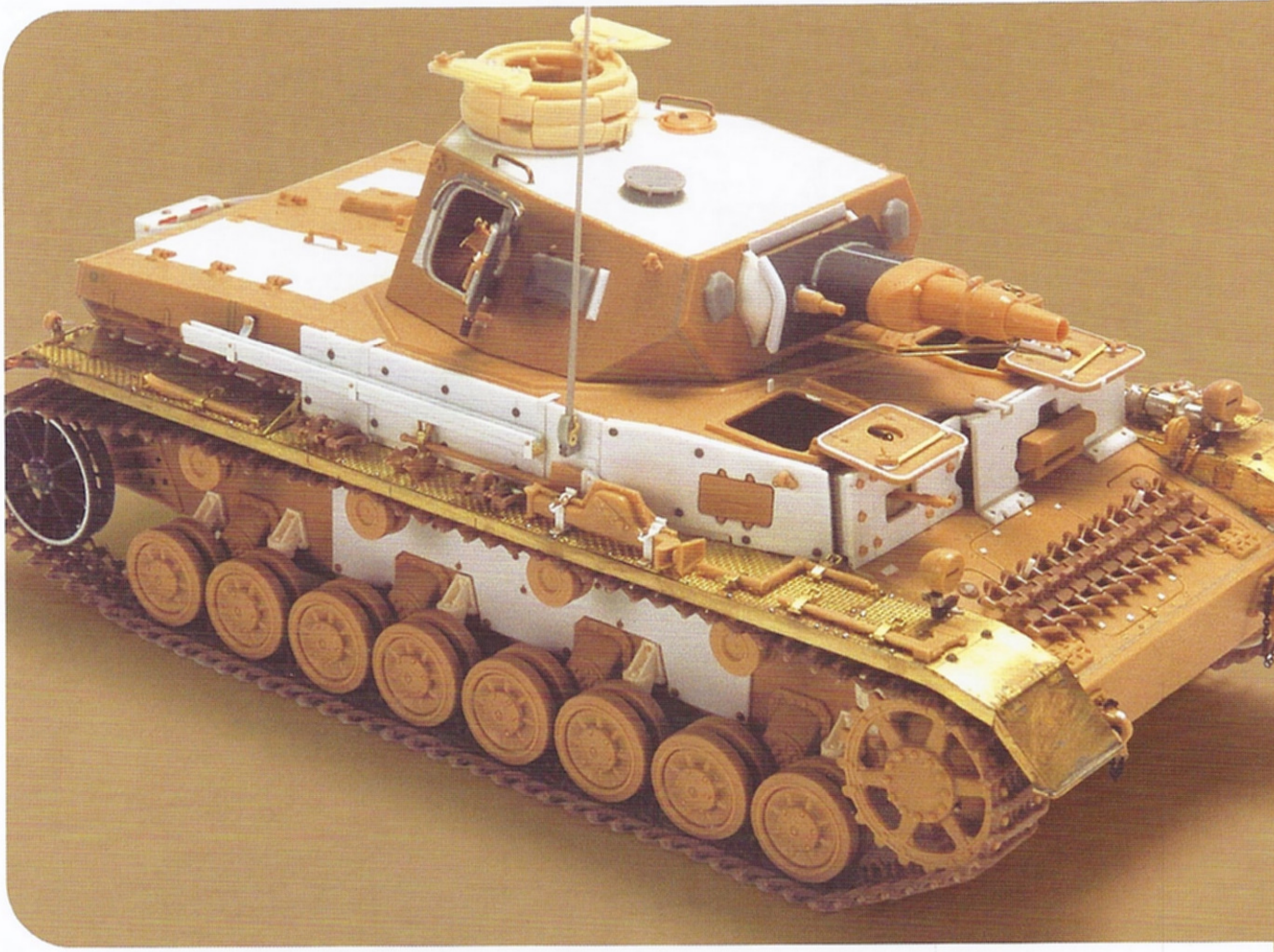












driver's side hatch should be in the centre.

I removed the moulded on detail and then drilled a hole in each hatch where the signal ports were located. The small round covers came from the Italeri Panzer IV F1, F2, G kit hatches. The hatch was cut away and then the covers were sanded down to the right thickness and glued in place but with the hatches open, this detail can't be seen anyway. On the inside, a piece of .020" styrene rod and a lifting ring from a model railroad detail set were added. The raised lip around each hatch was made from styrene strip. A locking bar made from brass strip was glued on along with the lock handles that I had shaved off.

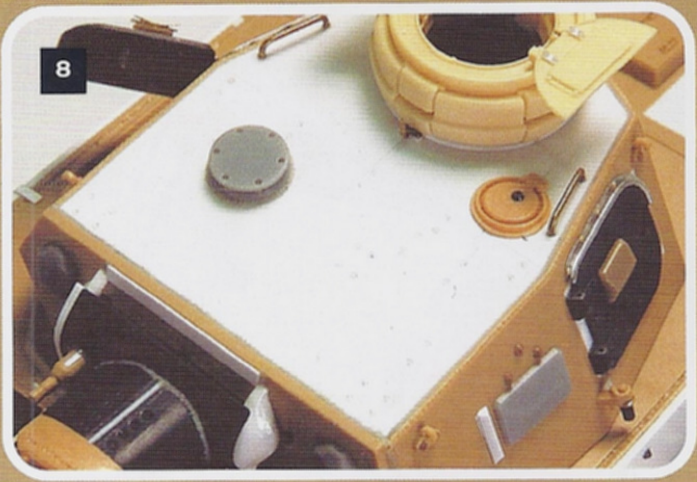
The Turret

The basic kit turret was used here but with a new, one-piece roof plate. The outline of the kit roof was traced onto a piece of .030" styrene sheet. Before cutting it out, the screw head pattern was laid out using the drawing from the Panzer Tracts book as a guide. By this time I was beginning to run out of Royal Model screw heads and began looking for an alternative source. I found I was able to scribe them using a wickedly sharp compass point from my old Staedtler Mars drafting set and a photoetch periscope ring from an On The Mark Models Jagdtiger set that had the right size hole in it as shown in photo 14. The resulting burr was trimmed off with my hobby knife leaving perfectly formed screw heads. And the best thing about them is that they were free!

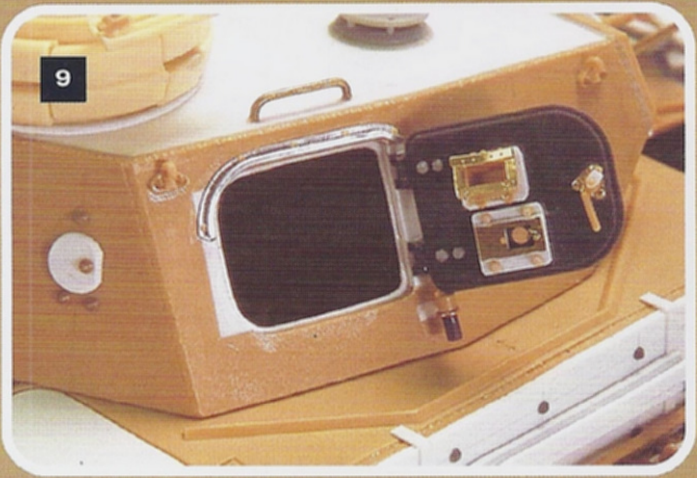
An early turret ventilator, a Dragon part taken from my spares box, and a signal port, taken from the Italeri Panzer IV kit, were added. The cupola is a little masterpiece produced by Tiger Model Designs and includes detailed vision blocks on the interior. The only extra work required here was a couple of bolts and styrene strip on the hatches and a new lock handle retrieved from one of the Tamiya turret side hatches. The finished cupola was glued into a hole cut in the turret roof that was built up with a .015" mounting ring. New grab handles were made from .020" brass wire.

I used the turret side hatches from the old Tamiya Panzer IV Ausf.D kit. This requires that the rectangular hole in the sides of the turret be filled in with sheet styrene. At this time I decided to have the right side hatch in the open position which required a little more work preparing the opening. The right side was chosen for two reasons. One was that I already had a resin figure from the Jaguar 'Have a Drink' set positioned for the right side and the other was that I still had the etched brass details from the Aber

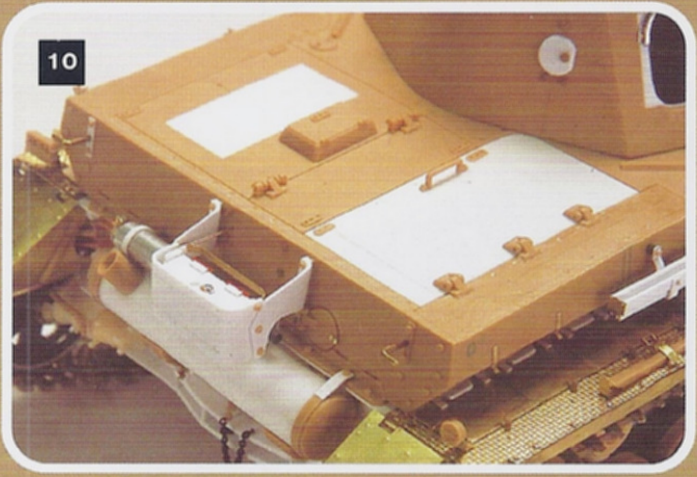
8



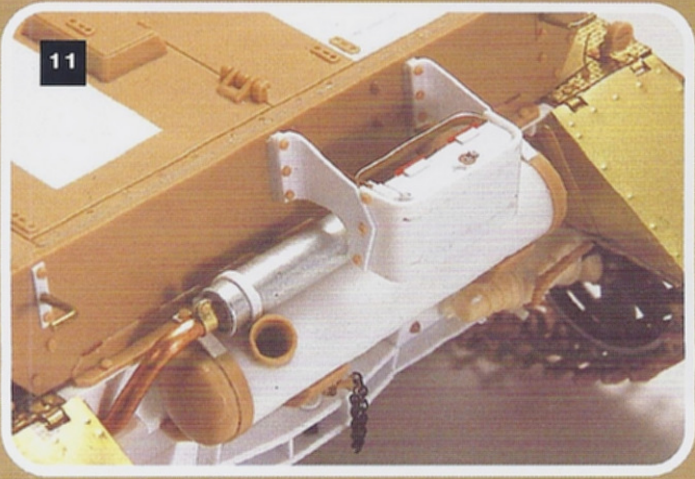
9



10



11



Panzer IV Ausf.D detail set. The right side hatch has the opening for the pistol port located too far forward so it was filled and a new one drilled completely through to represent an open port as shown in photo 9. The hinges for both hatches were shaved from the transmission access hatch locations on the Panzer IV Ausf.D kit as they looked more accurate than the ones on the turret. New vision flaps were added after removing them from the surplus Ausf.H kit hatches.

I made the rain gutters above the hatches from thin aluminum baking tin bent over a steel ruler and formed around a styrene hatch pattern glued to a larger styrene sheet. The Ausf.E utilized a turret hatch stop the same as those used on the Panzer III. Fortunately, the Tamiya Panzer III Ausf.L kit has two spares on which I replaced the bottom pulls with styrene rod and added a copper wire ring.

Side vision flaps in the forward sides of the turret were Dragon spares as were the ones on the front of the turret. The ones on the front required some judicious trimming to get the shape more accurate. The rear pistol ports are .020" styrene discs with one edge flattened and the perimeter tapered. Again, the conical rivet heads are from the Model Kasten detail set.

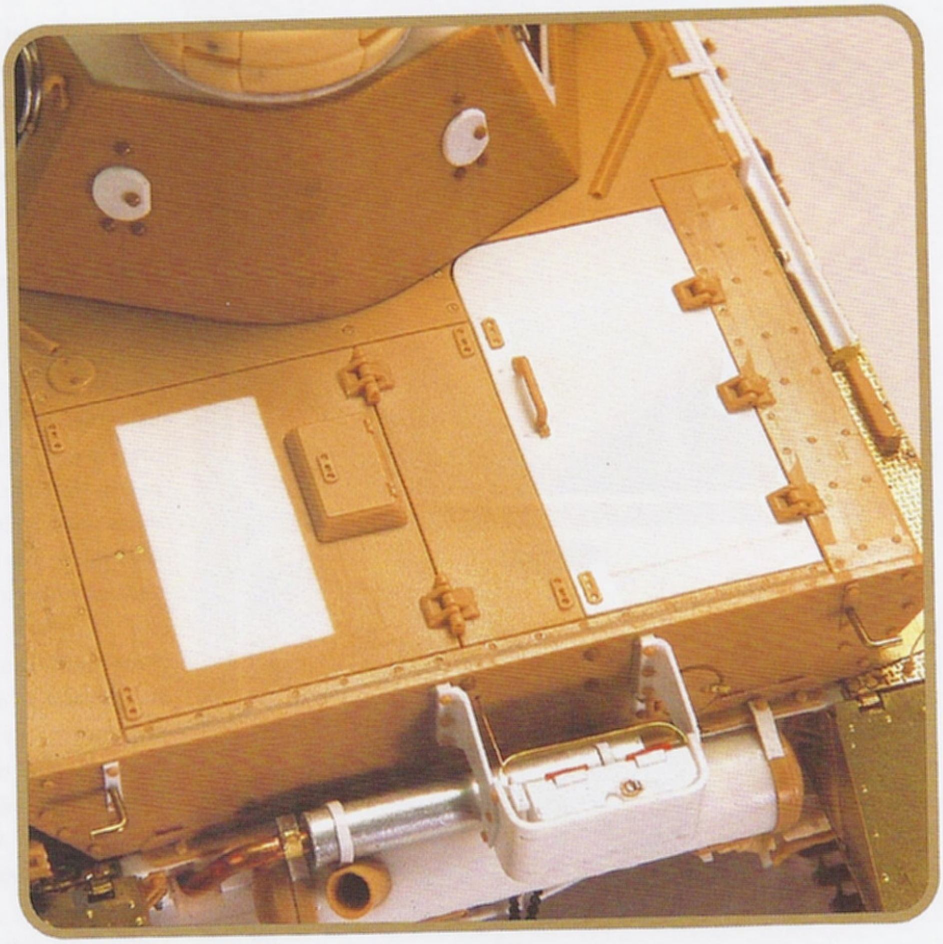
I mated the rear part of the gun from the Tamiya Ausf.D kit with an Italeri barrel. After gluing them together, the Italeri part was filed to match the shape of the Tamiya half and a weld bead melted in the recuperator housing with a pyrogravure, which is just a fancy name for a wood burning tool. As neither the Tamiya nor the Italeri antenna deflectors are correctly shaped, I made a new one from .040" brass angle. Bending it without distorting the shape of the angle is difficult and a pair of flat nosed pliers came in handy here. The front extension was filed to shape from a brass strip and soldered to the angle along with a .030" diameter brass rod mount. A piece of styrene strip with three small rivets on top completed it.

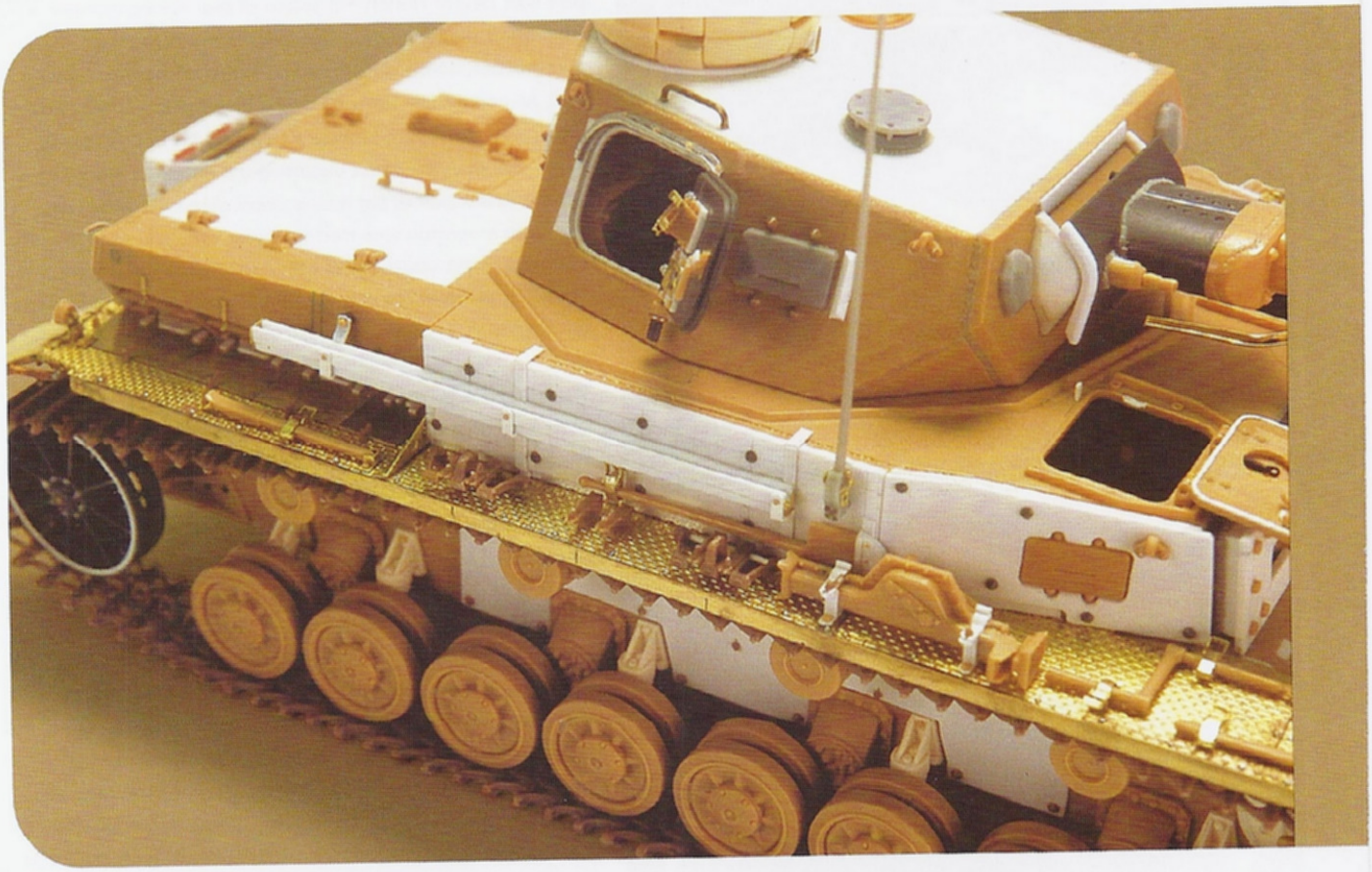
The trunnions on the front of the turret were shaped differently on the Ausf.D and Ausf.E and I was lucky to have a spare pair from an old Gunze Sangyo Panzer III kit that I reworked to fit. These are also spare parts in some of the Dragon Panzer III kits. When I tried to attach the gun to the kit breech, I found that it was offset to the left requiring the removal of .040" from the left side of the mantlet and adding a similar sized styrene strip to the right.

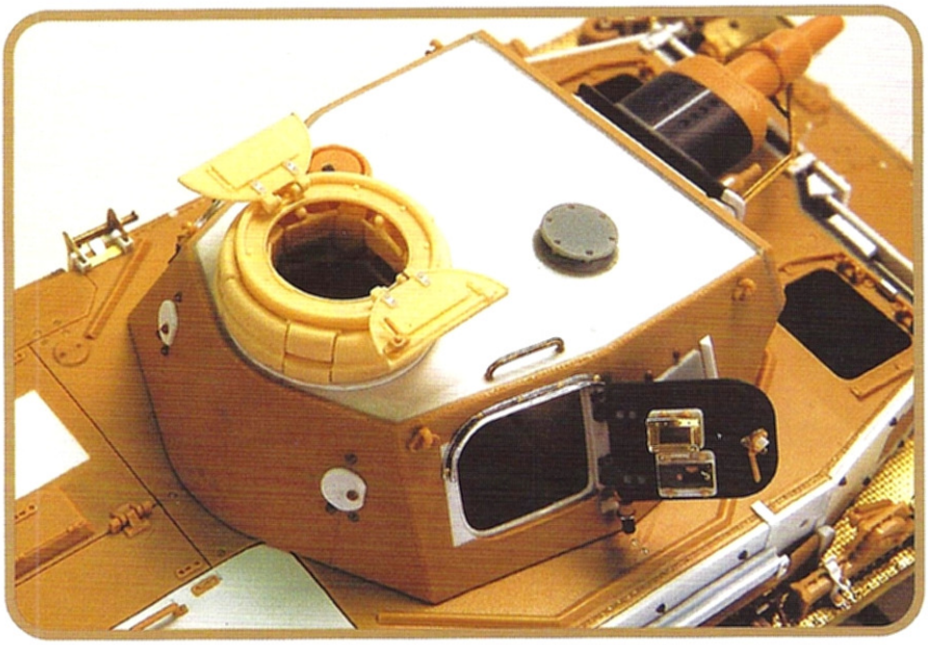
There are numerous flush screw heads and countersunk flush bolts in the engine deck that are shown on Hilary Doyle's drawings but can't really be appreciated until you see them first hand on the real thing. After seeing them on the APG Panzer IV Ausf.D, the screw heads were located and scribed in using the same method as used on the turret roof. The countersunk bolts were carefully melted into the plastic with a piece of brass rod soldered to my pyrogravure.

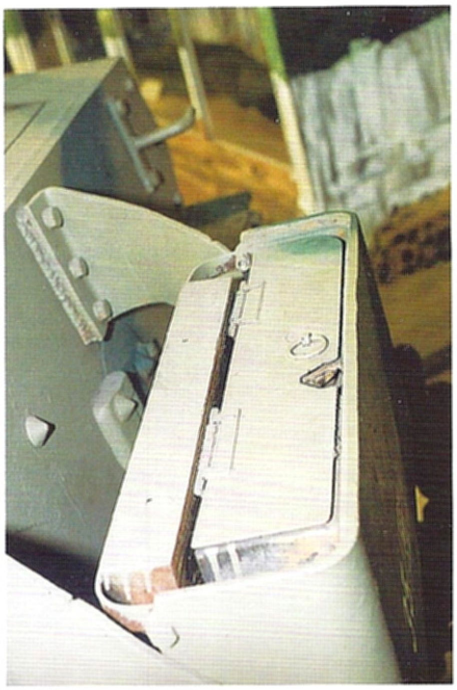
Adding the Details

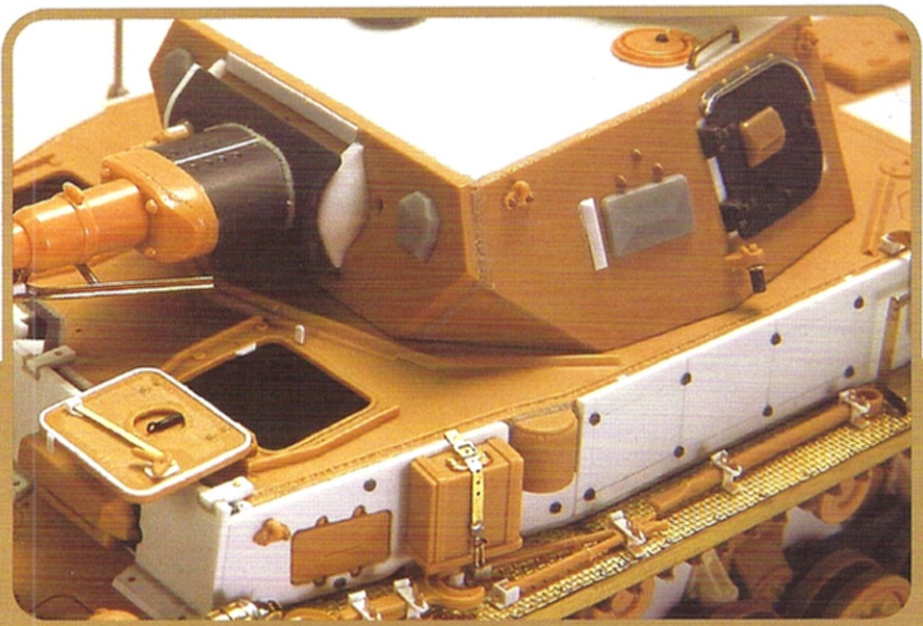
The tools and external fitting were left until the last. I was particularly keen to build the smoke discharger housing mounted on the back plate and for which I had three good photographs of the one on the Panzer IV Ausf.D at Bovington that I took in 1999. Photo 10 and 11 show how this was done. The external housing was made from .020" styrene sheet clamped onto a laminated plastic former. Boiling water was poured over it and it was then immersed in cold water to help hold its shape. A back plate and hinged lid were added along with some styrene rod smoke cans underneath. The mounting brackets were cut from .015" styrene which were superglued to two styrene strips forming a right angle, both pointing to the left. A .040" square styrene strip had one corner trimmed off to make it triangular and it was superglued to the inside corner. When the glue was dry, the inside corner was shaped with a round needle file and the outside corner flat filed to match.

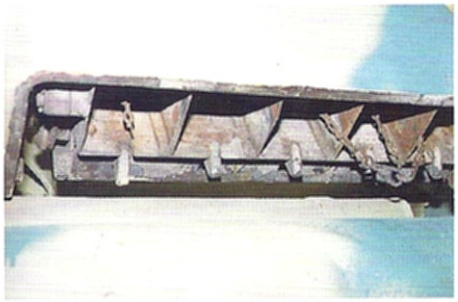










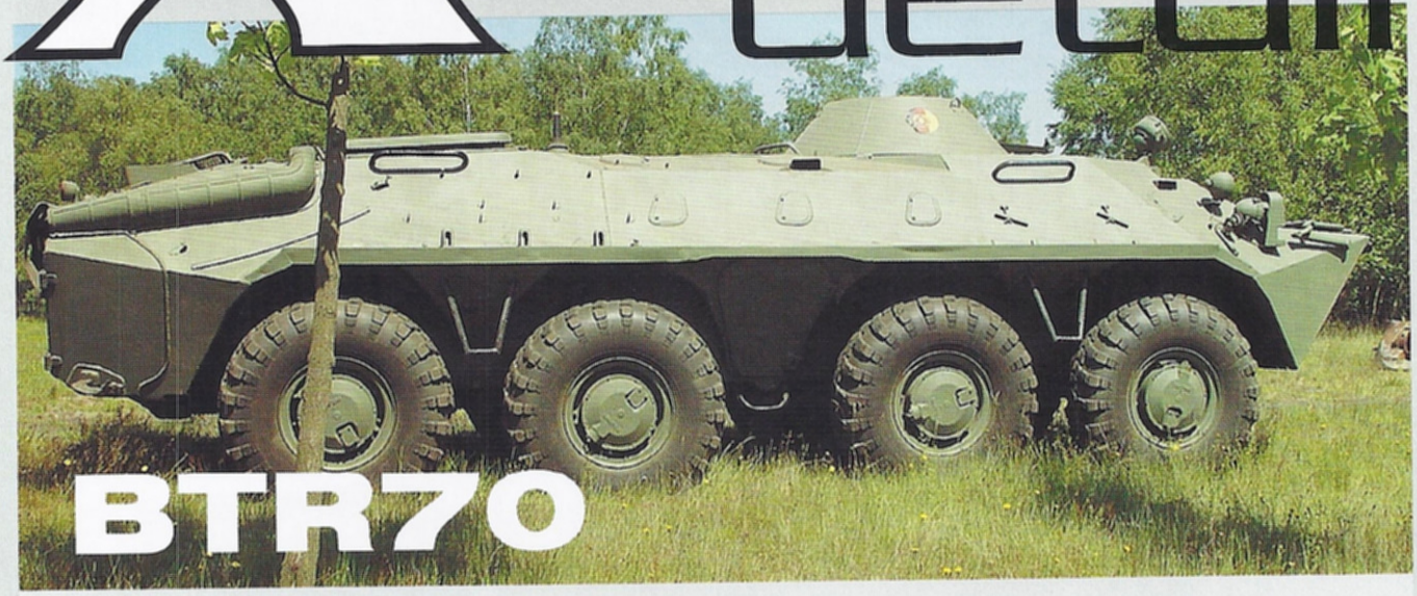


With the exception of the fire extinguisher, the tools are all from the Tamiya Panzer IV tool set that is sold separately and includes a section of early tools. On the right fender three spare track brackets were added from the Model Kasten SK-20 spare track set. The fire extinguisher is an Elefant white metal and etched brass piece with some other miscellaneous brass details. The front headlights and right rear taillight were taken from a Tamiya Panzer III Ausf.L as they were the most accurate parts that I could find. I should have taken the time to cast them in resin but I was anxious to take the unpainted model to display at the AMPS show and I had only two days left to finish it. The mounting brackets were made from .040" styrene rod, lead foil and copper wire. Aber photoetch brass workable tool clamps were used where needed and the rest were made from styrene strip and Model Kasten half-wing nuts. The folding step and track tool came from the Aber Panzer IV Ausf.F1 detail set and were soldered to brass rod for added strength.

The antenna stowage trough was made from a piece of .080" x .060" styrene strip laminated on top of a piece of .060" x .040" strip after the groove had been cut in with a dental pick and shaped with a round dental burring tool as shown in photo 21. Styrene strip brackets hold it in place. The two-meter antenna is from Dragon's German Tank Antenna set and was the last one I had. Unfortunately, they are no longer produced. The antenna base was drilled out and Aber brass details added on the front and back.

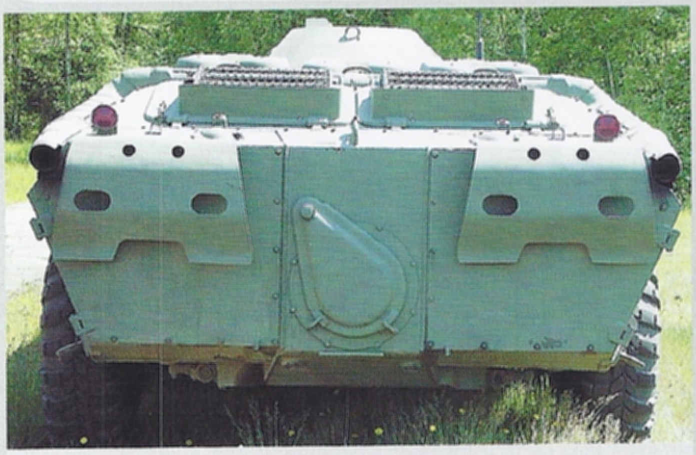
That completes the construction phase of the project. In part two, we will study how to paint and weather a Panzer Grey vehicle.

Xtreme detail

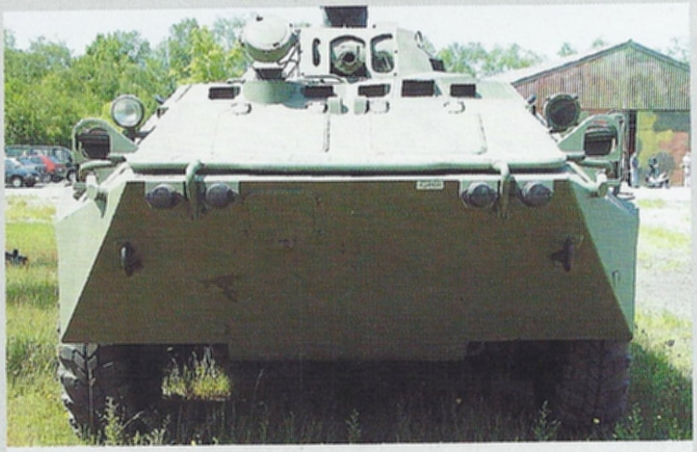


BTR70

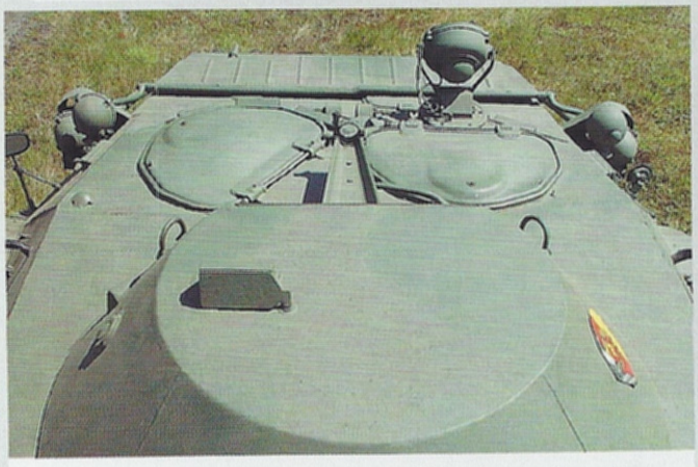
An excellent side view of the BTR70 note that this vehicle is missing its main armament. (Photo Jan-Willem de Boer)



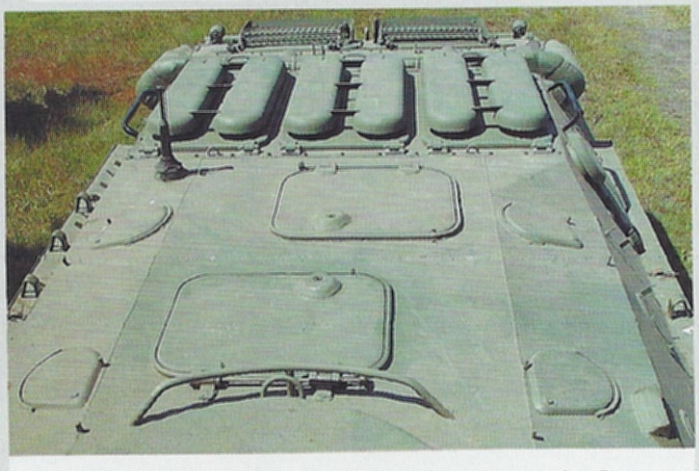
The rear of the vehicle notice the minimal exhaust staining. (Photo Jan-Willem de Boer)



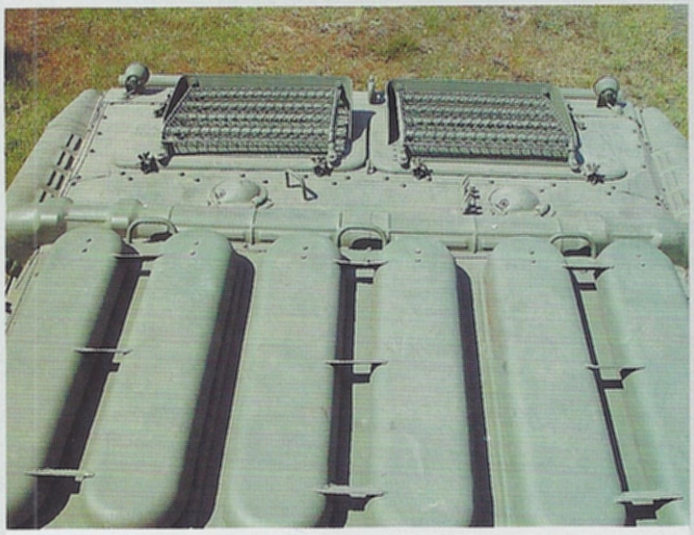
The very plain front of the vehicle. (Photo Jan-Willem de Boer)



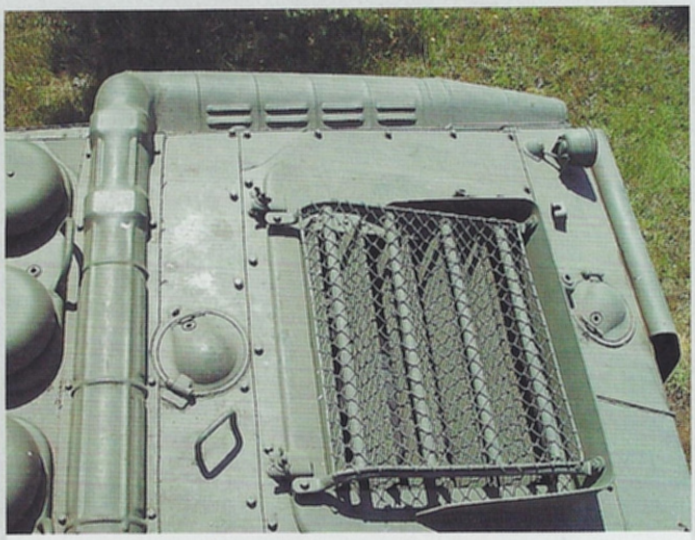
Looking down onto the front of the vehicle showing the offset front hatches. (Photo Jan-Willem de Boer)



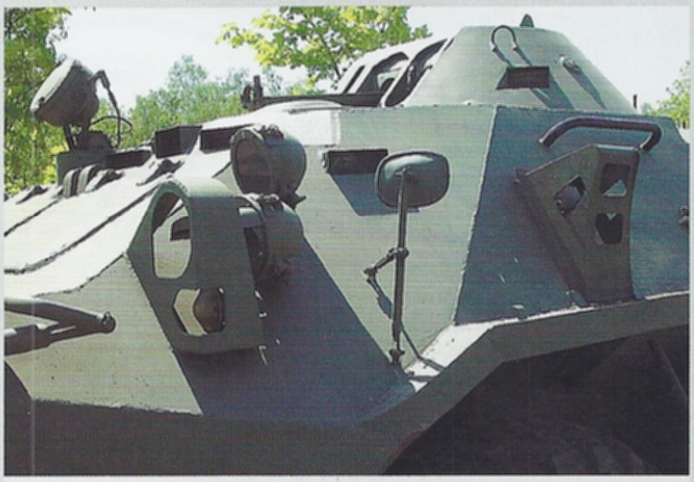
The rear deck with access hatches and weapon ports. (Photo Jan-Willem de Boer))



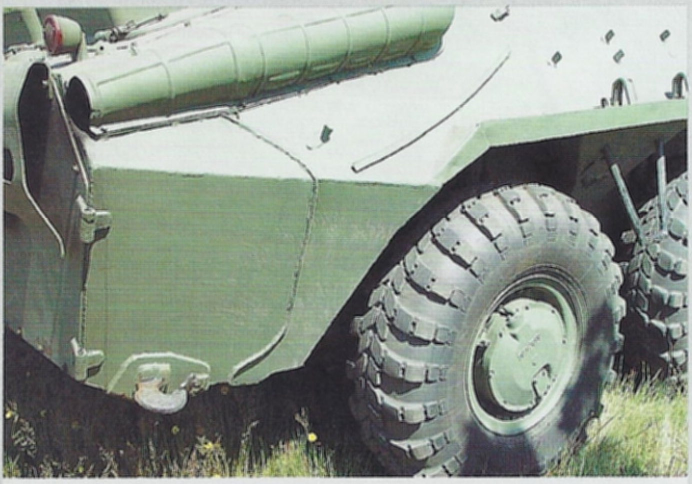
A good overall view of the engine deck, notice how delicate the ribs connecting the intake covers are. (Photo Jan-Willem de Boer)



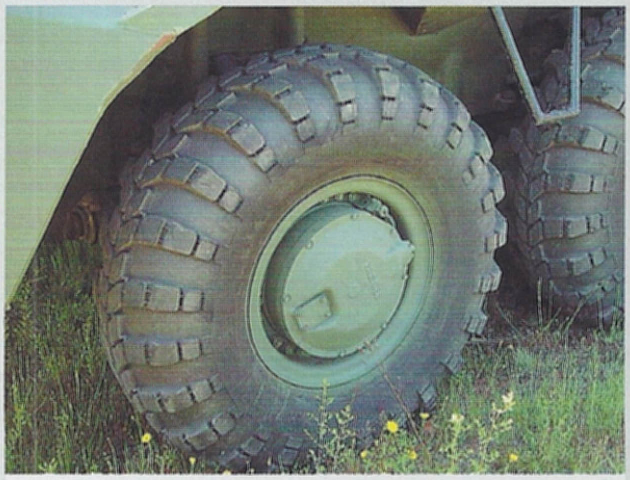
Mesh grills protect the engine intakes on the rear deck and you can make out the cable connecting the rear light. (Photo Jan-Willem de Boer)



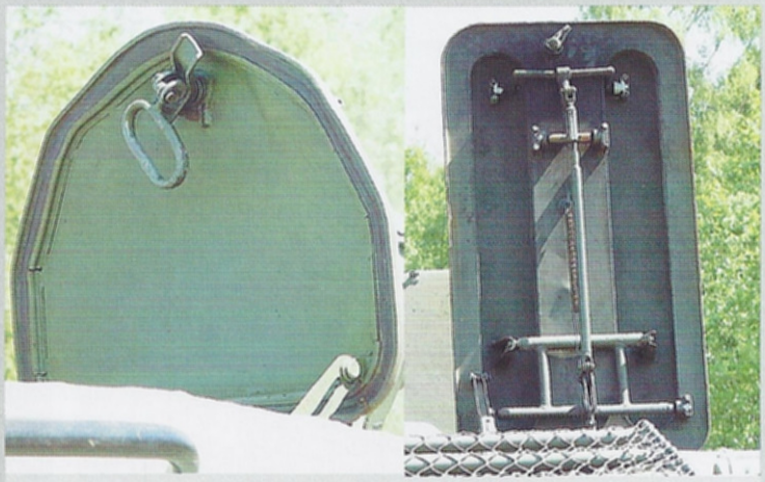
The front of the hull showing the light fittings and rear view mirror. (Photo Jan-Willem de Boer)



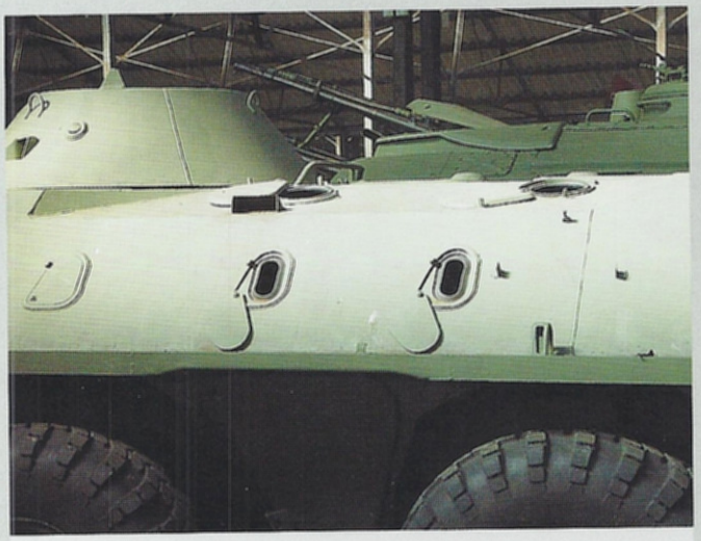
The rear of the vehicle showing the ribbed exhaust outlets.(Photo Jan-Willem de Boer)



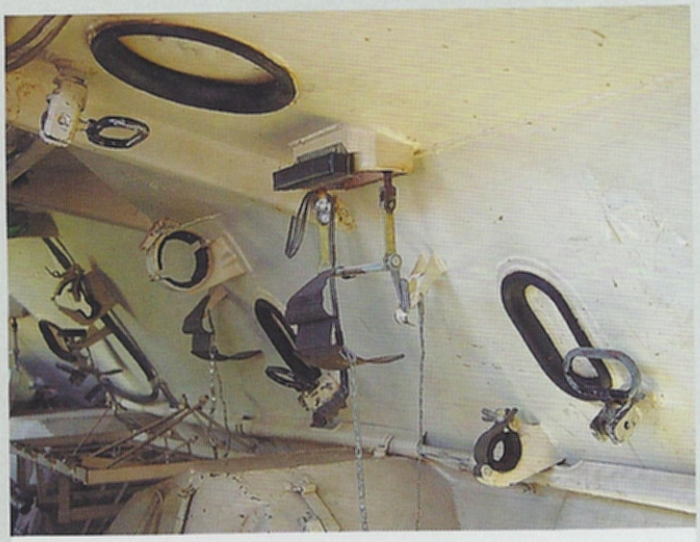
A good detail of the huge wheels with casting number on the hubs. (Photo Jan-Willem de Boer)



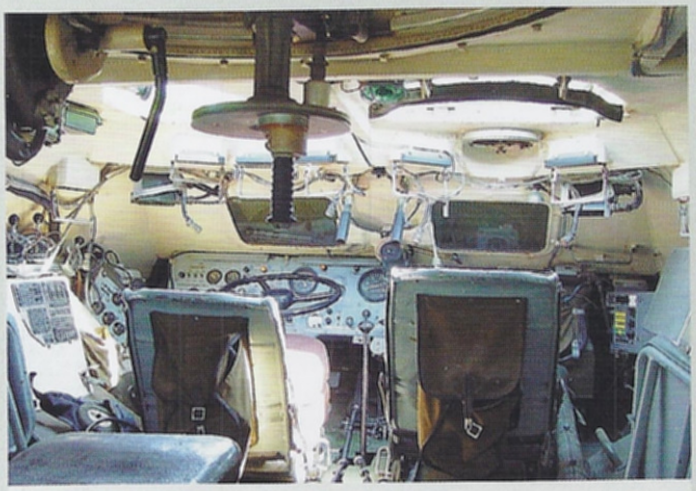
The interior of the co-drivers hatch and the engine access hatch. (Photo Jan-Willem de Boer)



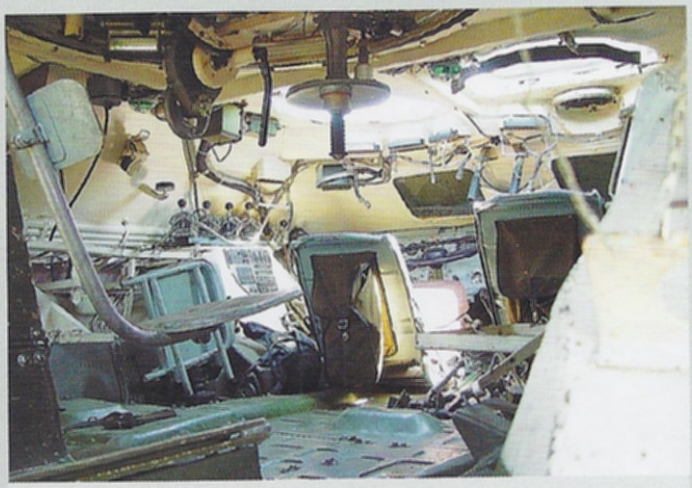
The open weapon ports on the hull side. (Photo Jan-Willem de Boer)



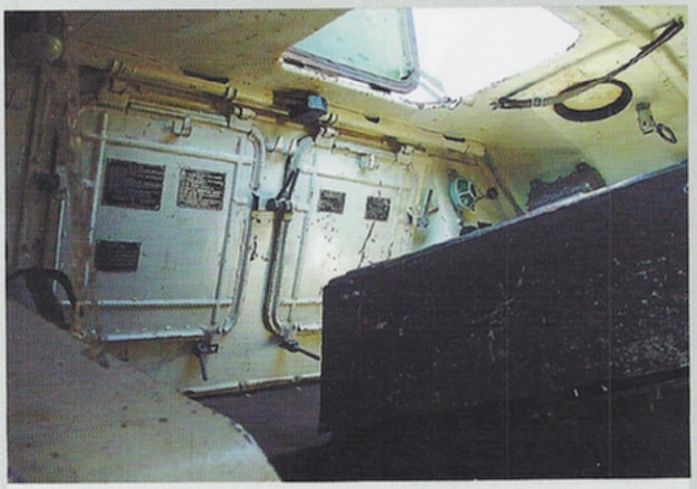
The same ports viewed from the interior notice also the one on the roof. (Photo Jan-Willem de Boer)



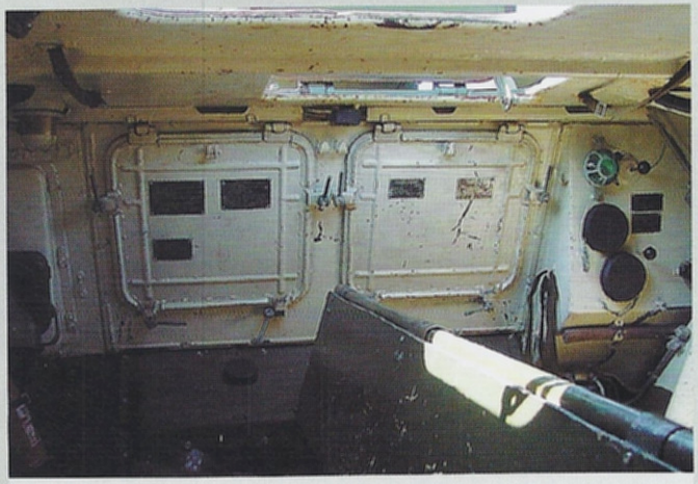
The driver's compartment with the shutters closed over the windscreen. (Photo Jan-Willem de Boer)



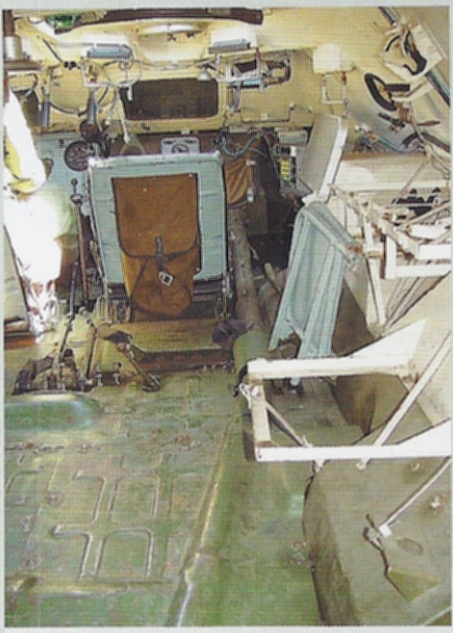
Looking forward from the side access door with a good view of the turret gunners seat. (Photo Jan-Willem de Boer)



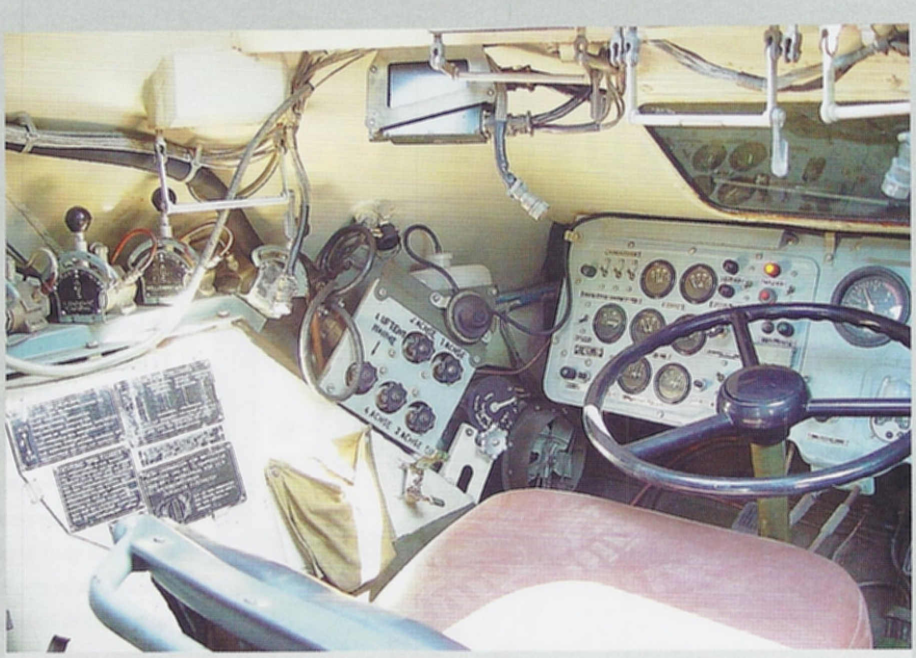
This is the wall dividing the engine compartment from the crew compartment with labelled acces hatches and the bench seat in the foreground. (Photo Jan-Willem de Boer)



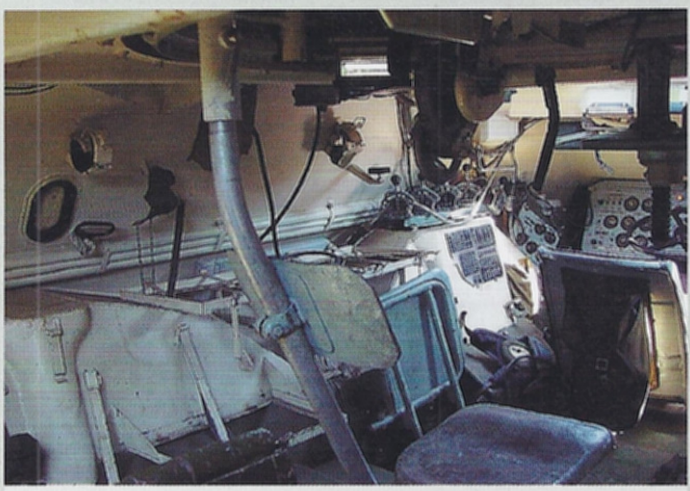
The rear wall again with the back to back bench in the foreground. (Photo Jan-Willem de Boer)



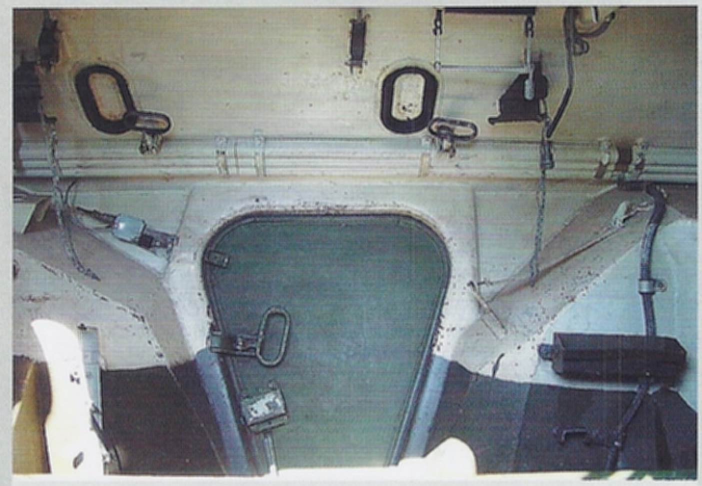
This shot looking forward shows the split in the interior colous with the floor being painted green.
(Photo Jan-Willem de Boer)



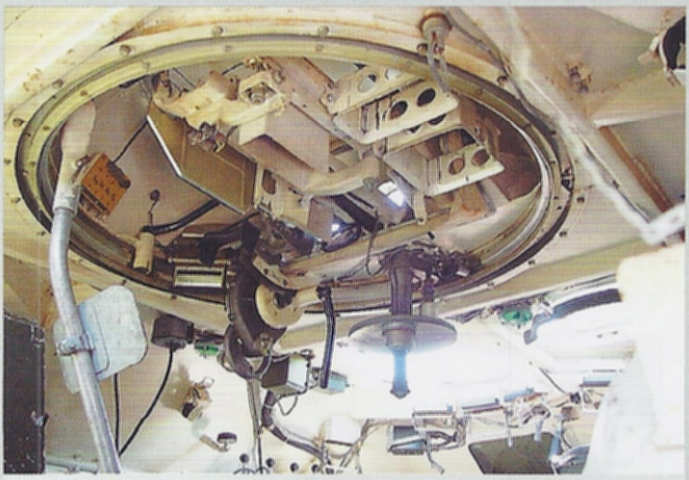
The Driver's position with shuttered windscreen and empty periscope frames.
(Photo Jan-Willem de Boer)



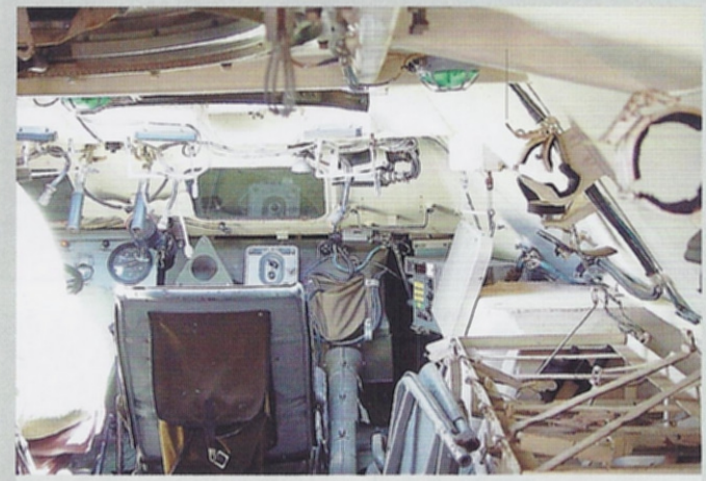
Looking across the compartment to the left hand wall with the turret gunners seat visible again. (Photo Jan-Willem de Boer)



This is the access hatch in the hull side situated between the wheel arches. (Photo Jan-Willem de Boer)

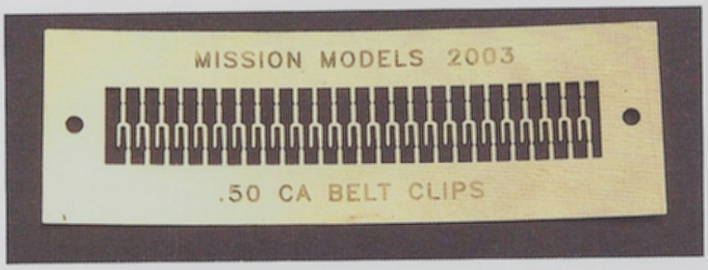


This view shows the interior of the turret to good effect although the weapon is missing. (Photo Jan-Willem de Boer)

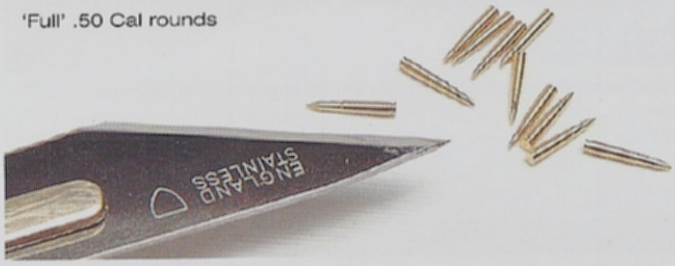


Looking forward showing the cluttered interior. (Photo Jan-Willem de Boer)

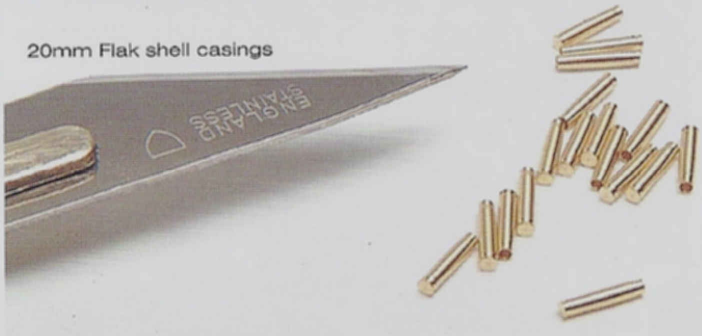
Keeping Track - new releases



'Full' .50 Cal rounds

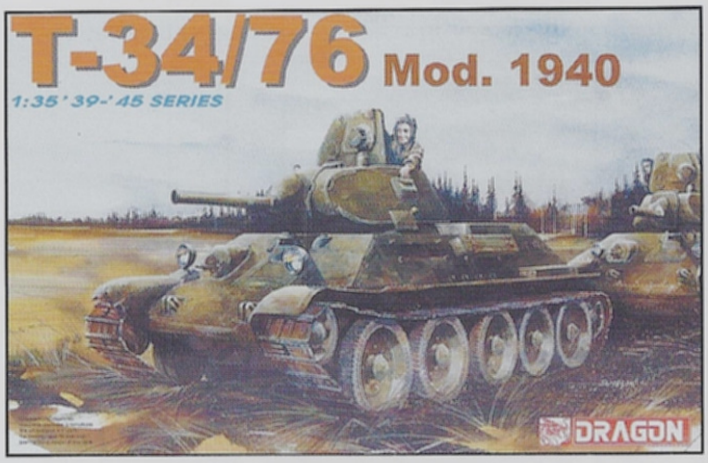


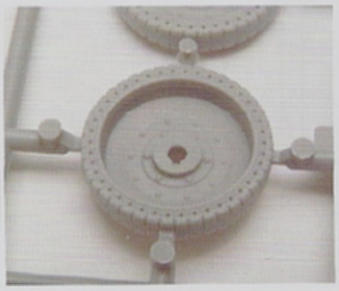
20mm Flak shell casings



Mission Models
Turned brass 20mm Flak and .50 cal Ammunition

For those of us with a tenuous grasp on reality these new releases from Mission Models will probably be the end. These turned 1:35th scale brass ammuntion sets for both the .50 Cal machine gun and 20mm German Flak are quite superb. The .50 Cal shells come in a choice of full and spent rounds with the spent ones having drilled out ends. Both these sets come with an etched brass fret to enable you to make clips to assemble a belt. The 20mm flak shells are only available as spent at present but thses are ideal to scatter around your Flak emplacement or over the engine deck of your Luchs. Mission Models have also announced a set of 37mm Flak ammunition with photo etched ammo tray which given the quality of these should be superb. Highly recommended.

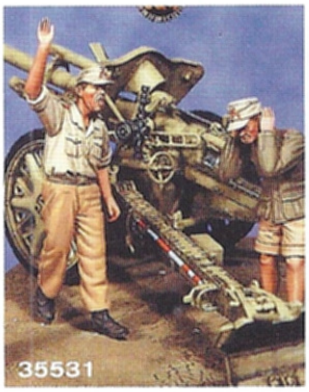


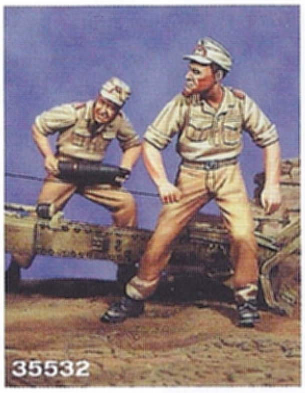


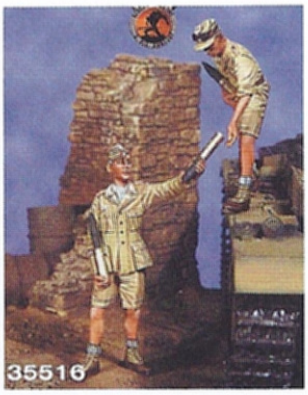
Dragon
T34/76 Mod.1940
Soviet Infantry Tank Riders

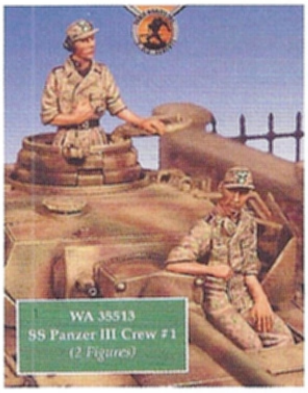
The Hobby Company have kindly supplied samples of these latest Dragon releases which go together quite nicely. The long-awaited first production model T34 is quite superb with crisp moulding and lovely weld details and the most delicate machine guns. The kit includes a good set of individual track links and separate headlight lenses. There is a basic turret interior although this only replicates the same level of detail as the old Tamiya kits with a basic breech and seats which is a little disappointing given that the big hatch exposes most of the turret interior. No doubt the aftermarket boys will be quick to supply a solution. The only other problem area is the solidly moulded engine deck screen which really needs to be replaced with an etched alternative. These points in no way detract from what is a superb kit and hopefully the first of a family series. Highly recommended.
The 6 figure set of Russian Tank Riders add to the long list of Dragon figures which are some of the best available injection moulded figures. As usual they are very well sculpted with some excellent natural poses and are designed to work with a T34/85 although with a minimum of modification they would compliment the T34/76. I especially like the mix of uniforms, headgear and weapons and you really cant go wrong.

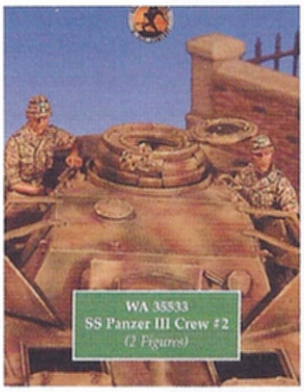
SOVIET INFANTRY TANK RIDERS
DRAGON
1:35 '39-'45 SERIES

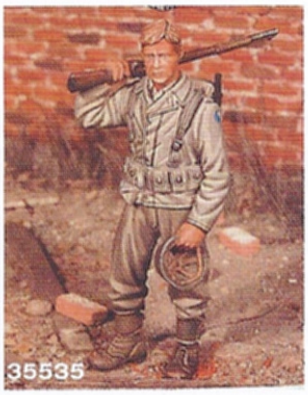


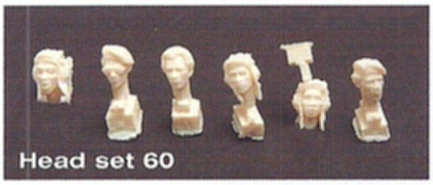


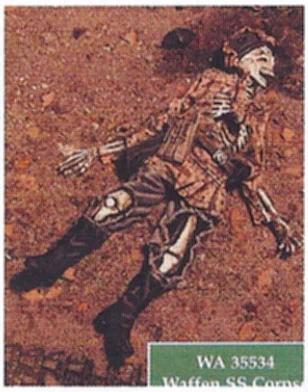












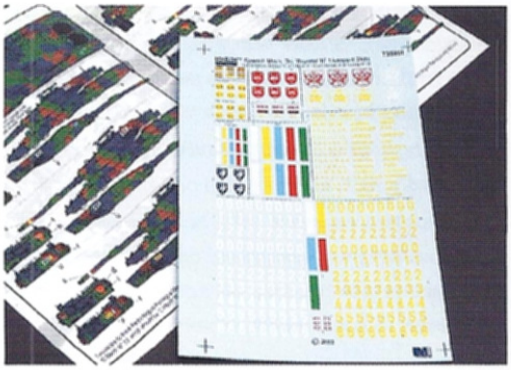
VLS

Warriors have released 2 figure sets to compliment the AFV Club 10.5 howitzer, both dressed in tropical uniforms, I am not sure why they are not just one four figure set as you wont get far with either one or the other. The anatomy is a little forced on these especially on 35532 where both figures have very strange looking legs. 35516 is an excellent Africa Korps tank crew rearming set with one man passing ammunition up to another standing on the vehicle. The only slight problem is the ammunition which will restrict you to using these with the short barrelled 7.5cm Panzer IV. Continuing the tank crew theme are 2 sets of SS panzer IV crew dressed in camouflaged overalls. Although they are labelled as Panzer III crew they are pictured with a IV and all feature excellent sculpting and really natural relaxed poses - superb. 35535 is a single US infantry figure standing in a casual pose and ideal diorama material. Something gruesome in this batch of releases 35534 is a decomposed SS infantry figure very nicely sculpted but with a rather limited appeal I would have thought, but if you are looking for for that kind of thing 35536 is a set of 6 skulls. Also available is head set 60 with the African heads from some of the recent figure releases.

Echelon Decals
Available from Accurate Armour
Spanish Leopard 2A4 MBT

Something a little unusual in the form of decals for Spanish armour from Echelon who are a new Singapore based company available through Accurate Armour in the UK. These waterslide decals are of extremely high quality with pin sharp detail and spot on registration and they come with a full colour instruction sheet showing positioning of the markings and camouflage patterns. All in all a top quality product which retails at £10.00 from www.accurate-armour.com

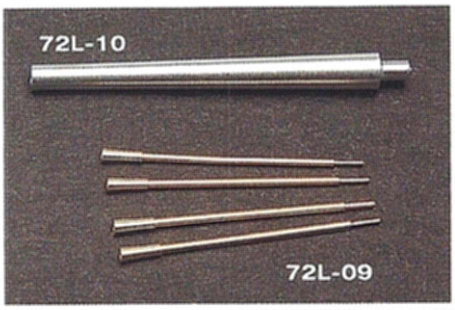
Pak 43/41
GERMAN
"Scheuntor"
8.8cm anti-tank gun

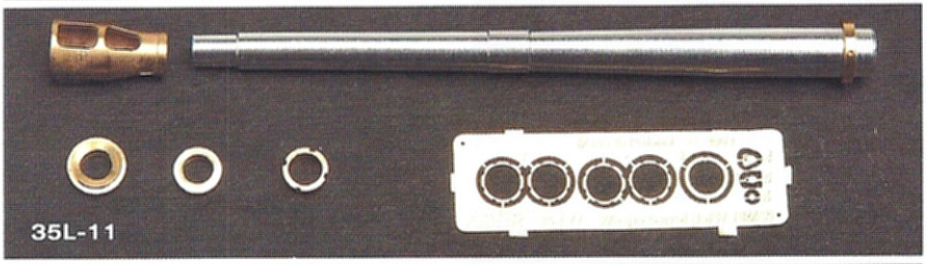


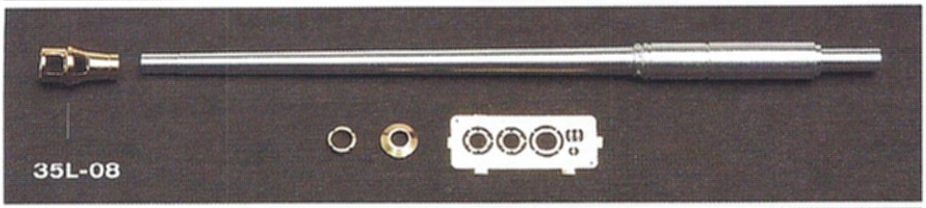
AFV Club
Pak43/41 88mm Anti-tank gun

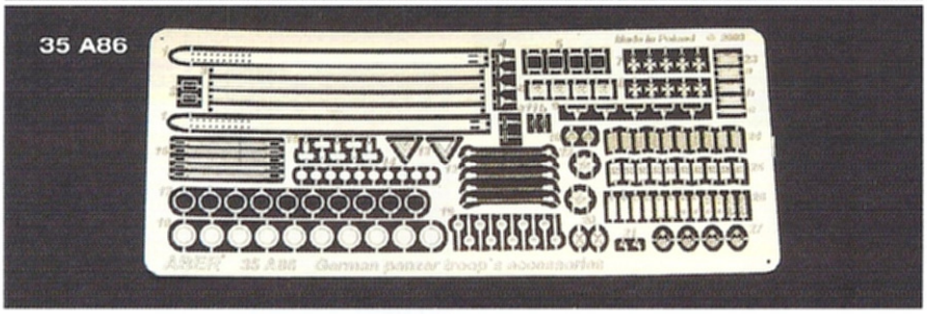
Coming as it does hard on the heels of their excellent 10.5cm howitzer it is no suprise to discover that this latest release is quite superb - delicate crisp mouldings, turned aluminium barrel, etched brass fret, pre-folded brass gunshields and rubber tyres. It simply does not get much better than this and I really cannot find fault with these kits. The kit includes information on 2 forthcomming releases, the SdKfz 251D and C which if they continue the standards that AFV Club are setting promise to be superb.

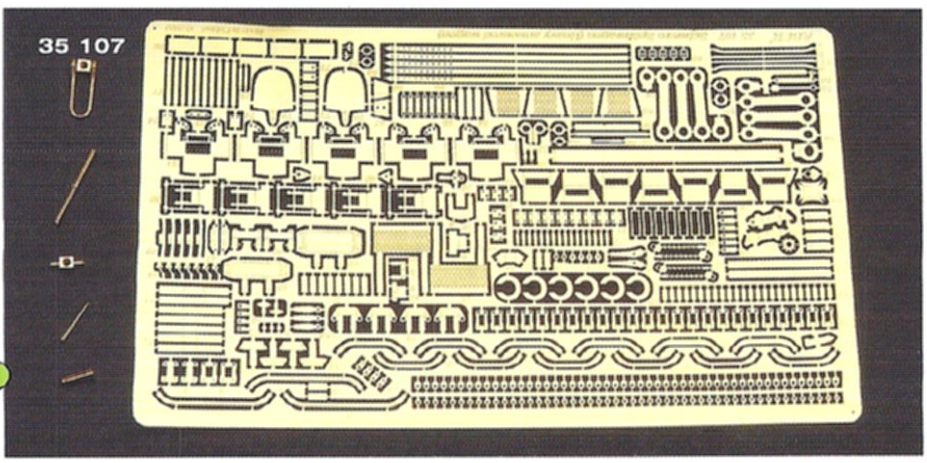
Keeping Track - new releases











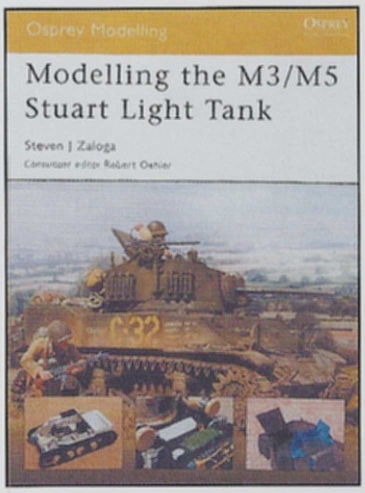
Aber

New releases from Aber coomence with 2 1:72nd scale barrel sets 72L-10 for the M4A3 Sherman and the minute 72L-09 for the wirlwind - these are like pins they are so small. Moving to 1:35th scale there are new multipart barrels for the Wespe, late model King Tiger and Flak 37 along with a rifled T34/85 barrel. These barrels really do set new standards in detail and accuracy.
The newest etched detail sets are for the Dragon / Revell Schwere Spähwagen (heavy armoured railway wagon). This set includes new rain gutters, visor hinges, steps and replacement tool stowage along with the most exsquisite shackle arrangement with 6 turned brass parts. There are also parts to detail both variations of the turret and the crew access hatches.
35 A86 is a small etched fret to detail your panzer crew figures which includes 5 sets of headphones, epaulettes for various ranks along with collar patches for Heer and SS, assorted medals and decorations and even 2 types of belts.

009
German Tropical Panzer Crew
ドイツ トロピカル パンツァー クルー
Tristar

Tristar
009 German Tropical Panzer Crew

Tristars new Tropical panzer crew has been designed to work with their Panzer 1 kits which makes sense. The set includes 2 seated figures one with a bandaged head along with a 3/4 commander figure and one full figure. It also includes one of their excellent weapons sets. Sculpting and moulding are exemplairy as usual and the figures look like they will adapt with very little effort to suit a variety of vehicles.


Osprey Modelling
OSPREY
Modelling the M3/M5 Stuart Light Tank
Steven J Zaloga
Consultant editor Robert Oehler

Modelling the M3/M5 Stuart Light Tank

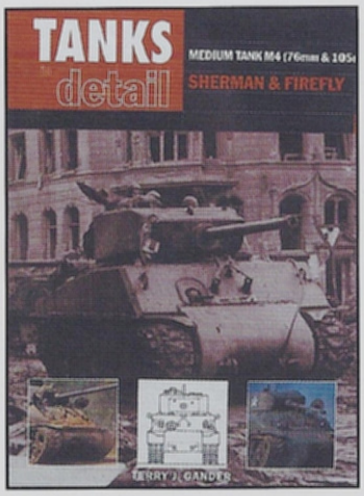
By Steven Zaloga
Published by Osprey Publishing

The fact that this book is written by Steve Zaloga really tells you all you need to know making this something of a definitave reference for anyone modelling the Stuart. Each variant is modelled with a guide to correcting any errors and ommisssions in the available kits and accomanied with reference images from the actual vehicles. Many of the models will be familiar to readers of Military Modelling but this does not detract from this extremely useful reference and its is hard not to be inspired by the work of one of 'the' great modellers. Highly recommeded.

German Secret Weapons

Blast Models

Blast Models continue to release new products at a pace with some useful and interesting subjects. There is a nice Infra Red conversion for the Kubelwagen which is different, new stowage sets for both early Shermans and the T34/85 as well as a superb M4A3 update set with a host of delicate details and a useful set of domestic products to dress modern diorama subjects.



Tanks in Detail No.6 Medium Tank M4

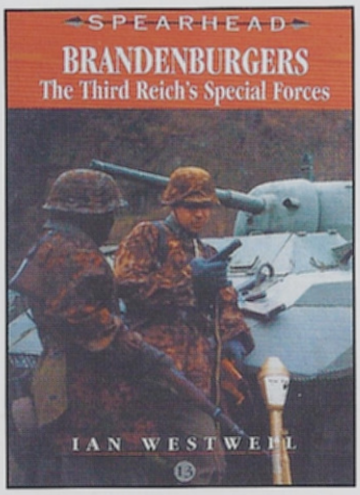
By Terry Gander
Published by Ian Allan

The M4 Sherman is the latest release in the Ian Allan Tanks in Detail series and it very much follows the established theme for these handy references with a host of photos tracing the development of the vehicle from the M4A1 through to the Firefly. It contains colour images of several preserved vehicles along with divisional markings. If you already have a good reference library on the Sherman I doubt this will add much but if you are looking for a cost effective compact reference with plenty of pictures you really can't go wrong.

Trackstory No.1Somua S35

By Pascal Danjou
Published by editions du Barbotin

Pol Models have sent a copy of this excellent 52 page publication on the Somua S35. It traces the development and employment of the tank in France, Russia, North Africa and its part in the liberation of France in both French and English text. It contains colour pictures of preserved vehicles along with an excellent set of colour profiles and information on unit markings and it is well illustrated with 60 black and white images. This really is essential reference for anyone interested in WW2 French armour. Pol Models can be contacted on 020 8992 3822 or email Polmodels@AOL.com



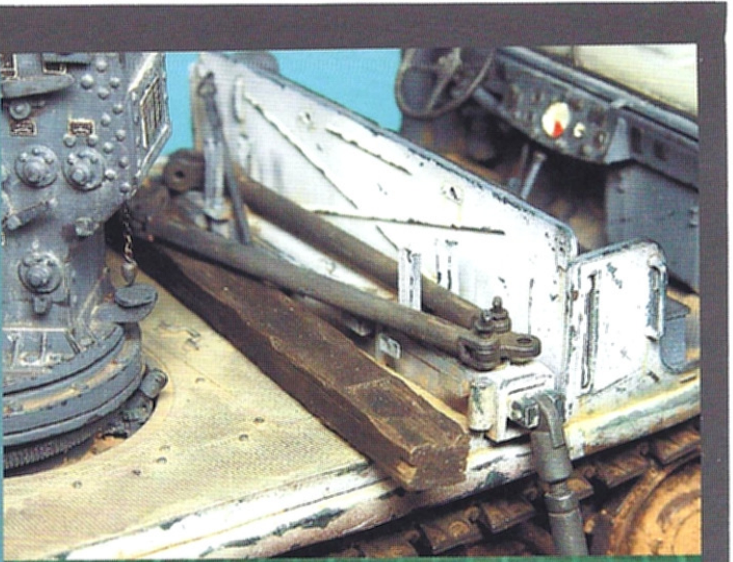
Brandenburgers-The Third Reich's Special Forces

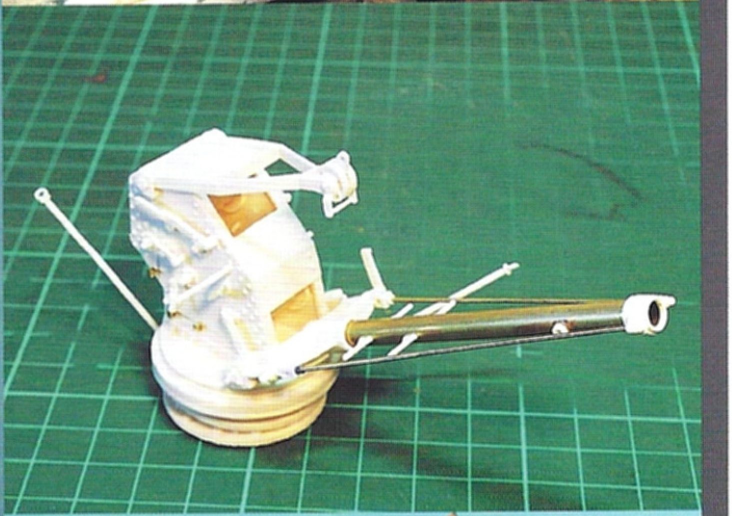
By Ian Westwell
Published by Ian Allan

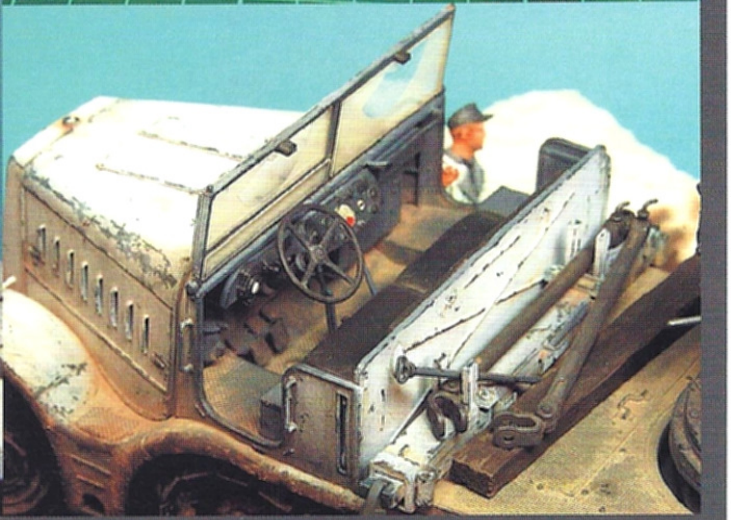
This book covers the history and operations of the Germans special forces from their pre-war formation through to the last ditch operations at the end of the war. The book is well illustarted with both photographs, numerous maps and some nice computer rendered illustrations of the M10 Panthers employed in the Ardennes and the Goliath demolition vehicle. There is also an interesting chapter giving a brief biography of the key personalities, most notably Otto Skorzeny. This is quite a specialised subject and its good to see this covered in such an accessable format.

TRACKSTORY
SOMUA S 35
N° 1

Building the Bilstein





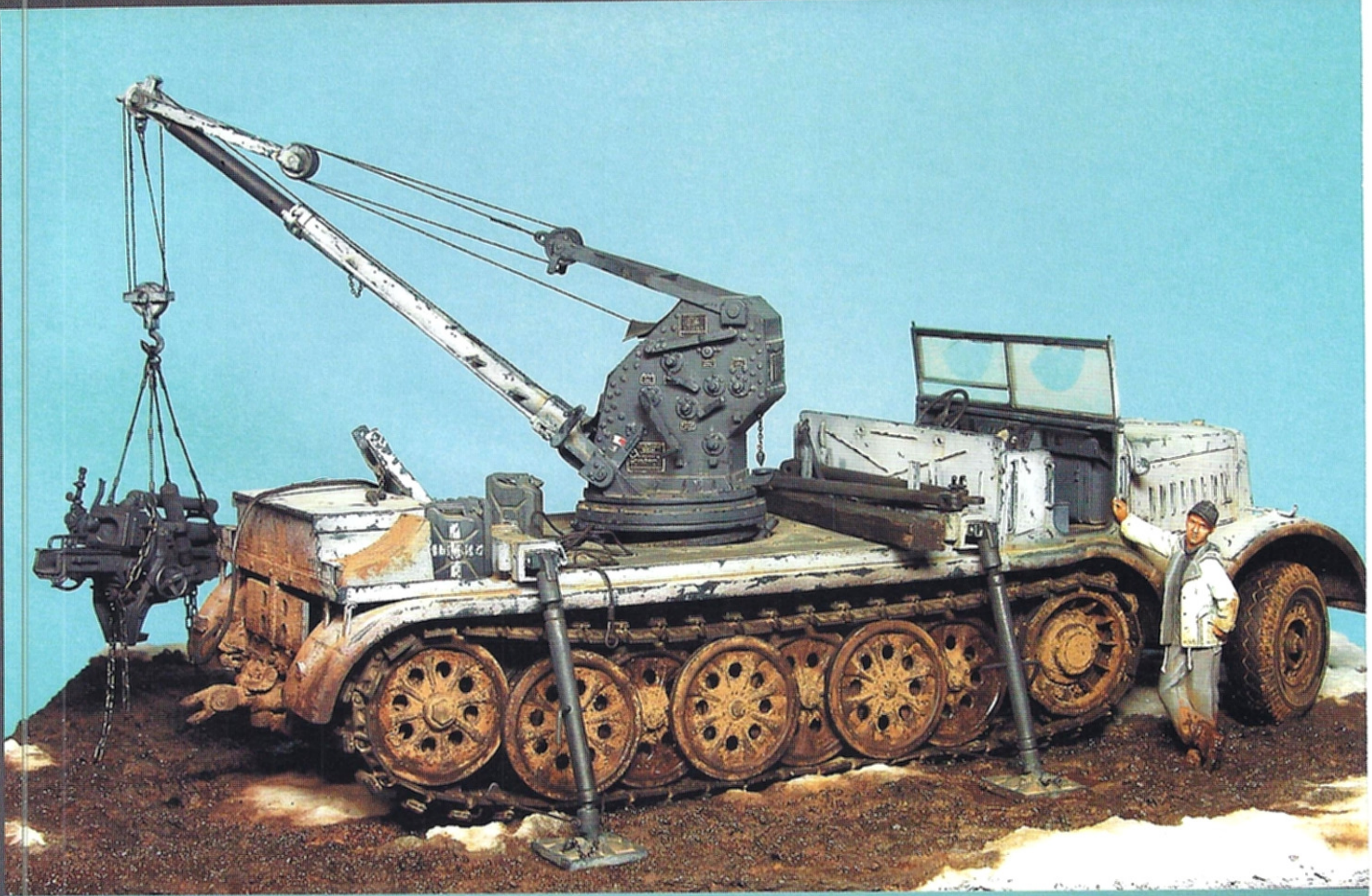


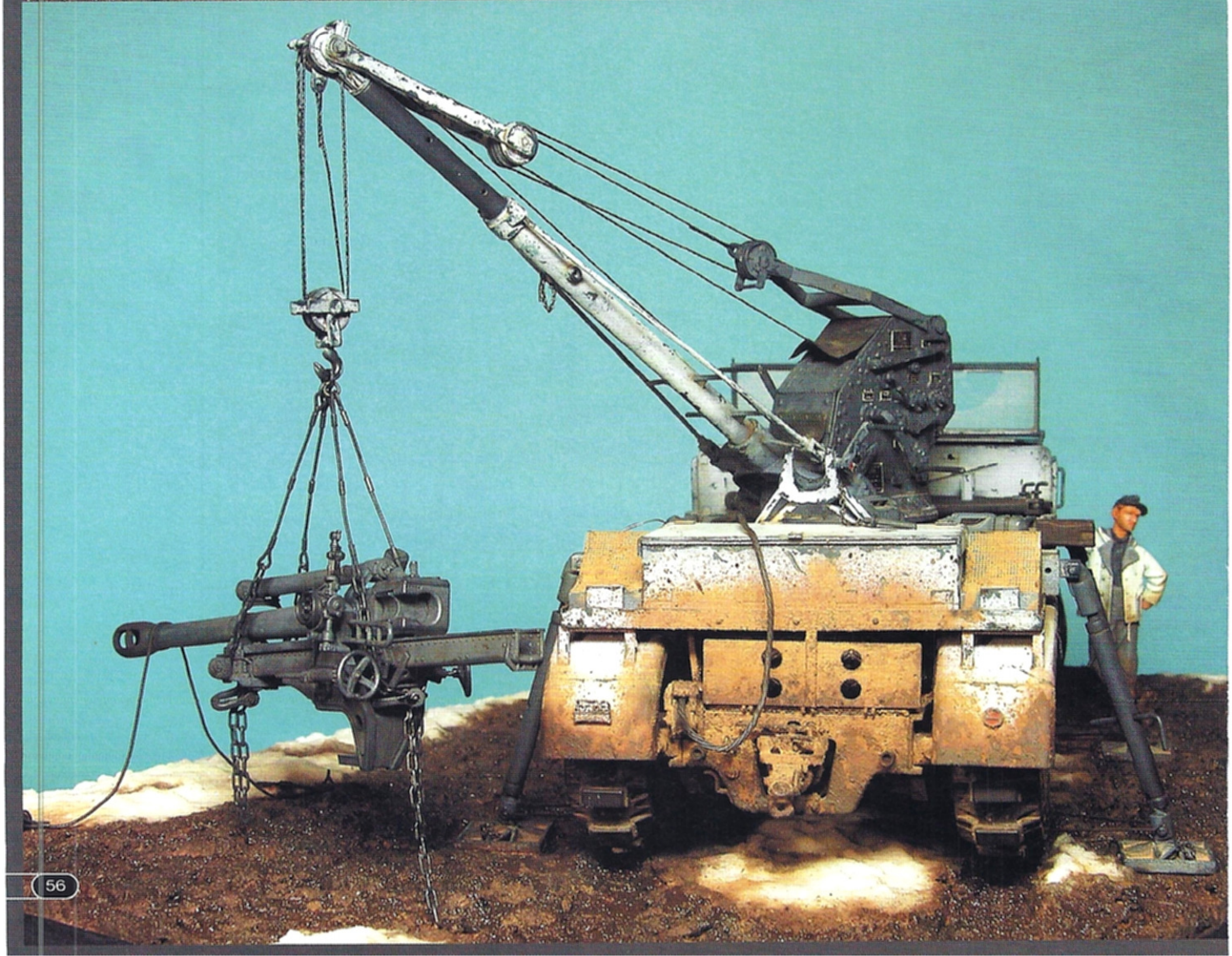
Darren Thompson builds the Tiger Model Designs Conversion Kit

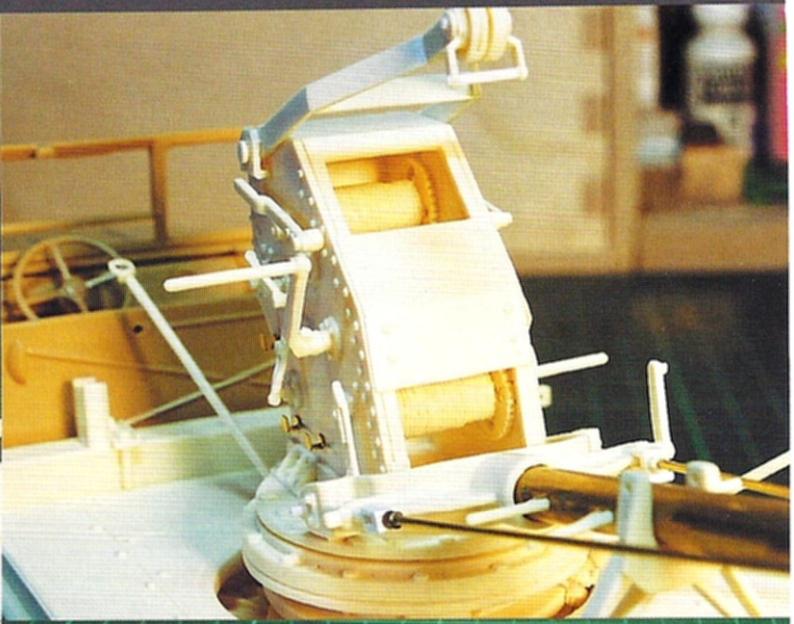
At the time of it's release, this was the largest & most ambitious kit in the Tiger Model Designs range & is designed around Tamiya's excellent Famo.

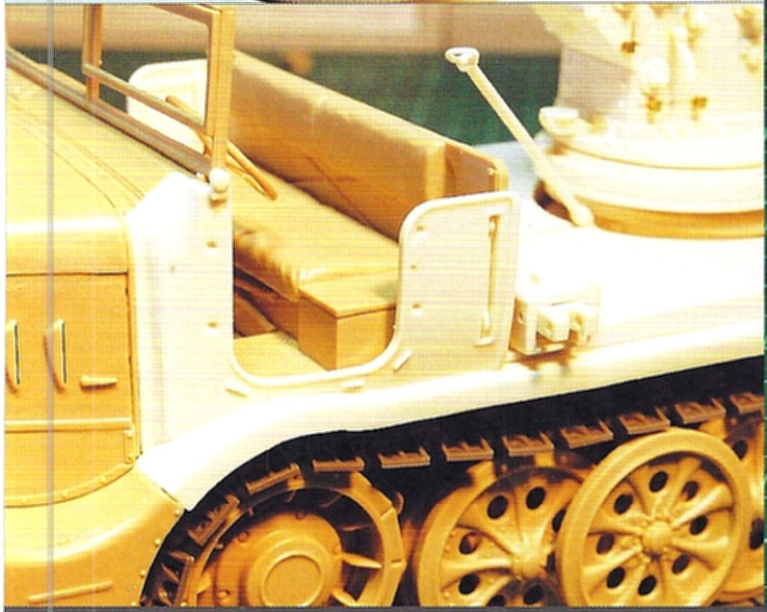
The stout box contains several bags full of resin parts, a small p.e. fret, a piece of thread, for rigging & a pair of pre-drilled, telescoping brass tubes. Add to that a generous peice of lead foil, a small decal sheet & a length of some of the finest chain I've ever seen & you've got yourself a fairly comprehensive kit.

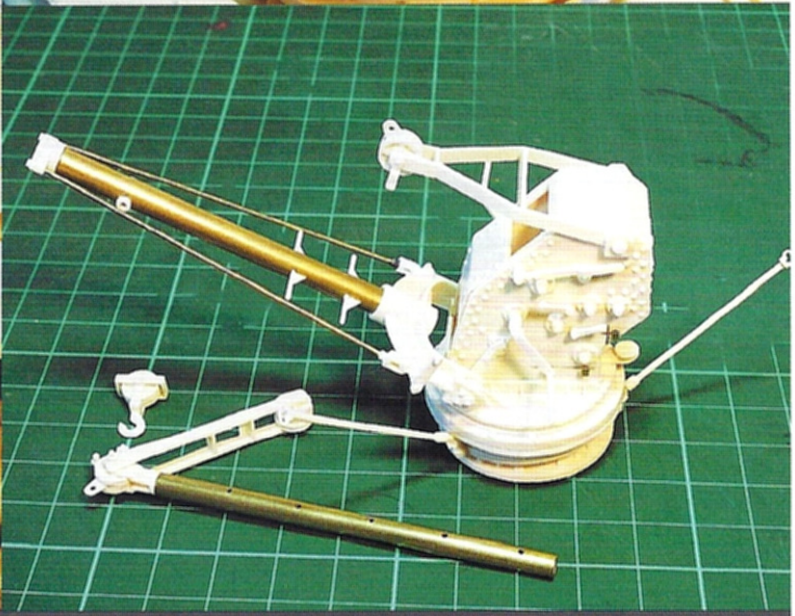
The first thing that sets this product apart from many of the previous conversion sets I have tackled, is the quality of the instructions. After giving a brief history of the vehicle & recommended references, they go on to give both clear, step-by-step line drawings & written assembly guides, that even the most inexperienced modeller could follow.







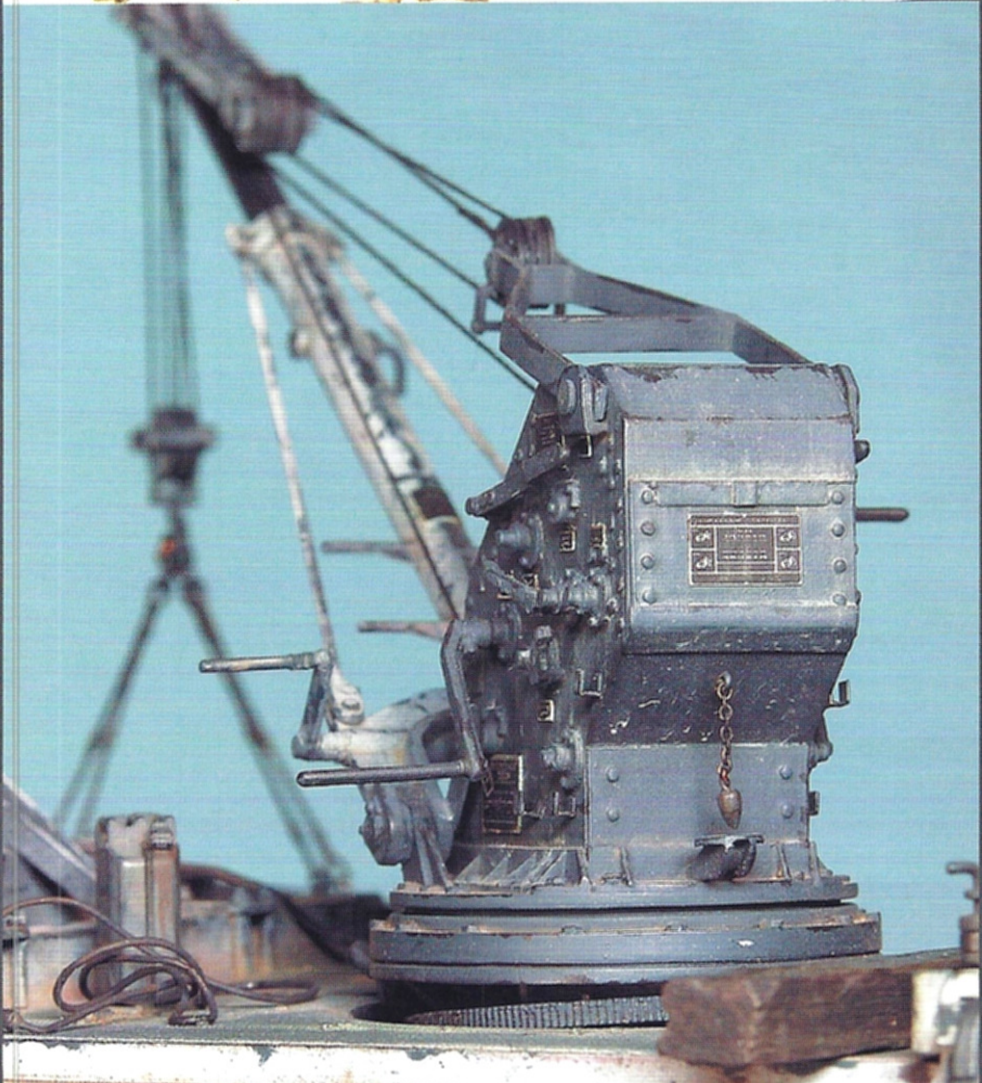




Construction starts with the new rear bed assembly, this main component is a large, one piece mould, with details on both top & bottom, with the carrier plug situated along one edge. The underside is detailed first by adding the main rails, crane base, spare wheel housing & a pair of full length fenders, which, despite their frail appearance, were dead straight. A lot of thought has gone into the moulding process. I've lost count of the times I've had to remove a badly placed pouring plug on a resin kit, only to then have to try & replace the details that were lost in the process. Not here though, all excess to be removed, is either on a flat surface, which is easily restored, or in a location that is eventually unseen & on delicate items, each plug gives the maximum of support to it's part, to resist the dreaded warping. Once the underside is complete, we move to the top.

The first item to build is the rear storage box, this is made up of a large one-piece lower section, consisting of the base & three sides, with a seperate lid & back. This allows the box to be modelled open or closed & the parts, although again, quite delicate, were perfectly straight & blemish free. The hinges for this box are supplied as etched brass parts, but I found these rather lacking in detail & also overscale, probably best replaced with plastic strip & rod. The etched sheet also provides several tool clamps, but these are much nicer. Next come the outrigger boxes, mounted across the rear deck. Both are built up as small sub-assemblies & it's at this stage of the instructions that you are given the choice, as to wether you show your legs deployed, or stowed. I chose to leave this stage until the end of the build, along with the assembly of the outrigger legs themselves, purely because I hadn't made up my mind yet. The instructions do state that there are no known photographs of these legs actually being used in the field, but we'll come back to that later....

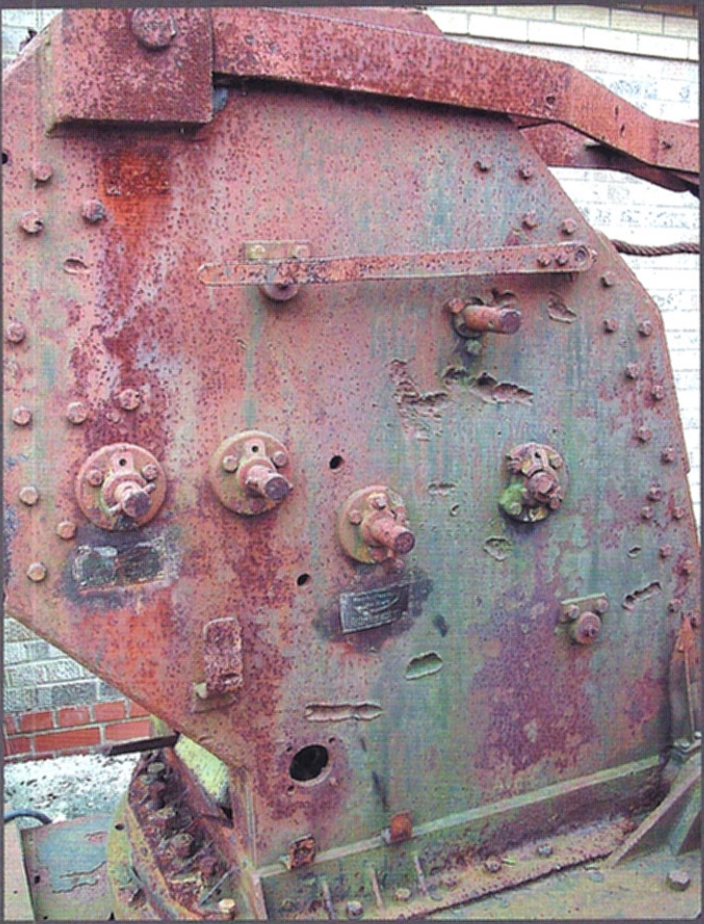
At this point I began assembling the Tamiya kit. Assembly is as per Tamiya's instructions, until you reach stage 17. The conversion kit represents the production version of the 9/1 Famo, not the prototype & so the Tamiya kit must lose it's 2nd row of seats. Tiger Model designs have kindly supplied new, cut-down side walls for the cab, so the only surgery needed on the Tamiya kit is the removal & re-placing of the fuel tank. During these stages, many of the Tamiya parts are combined with the TMD parts, but again, the instructions are very clear, refering to both kits' part numbers, where appropriate.
The crane is a small model in itself, the



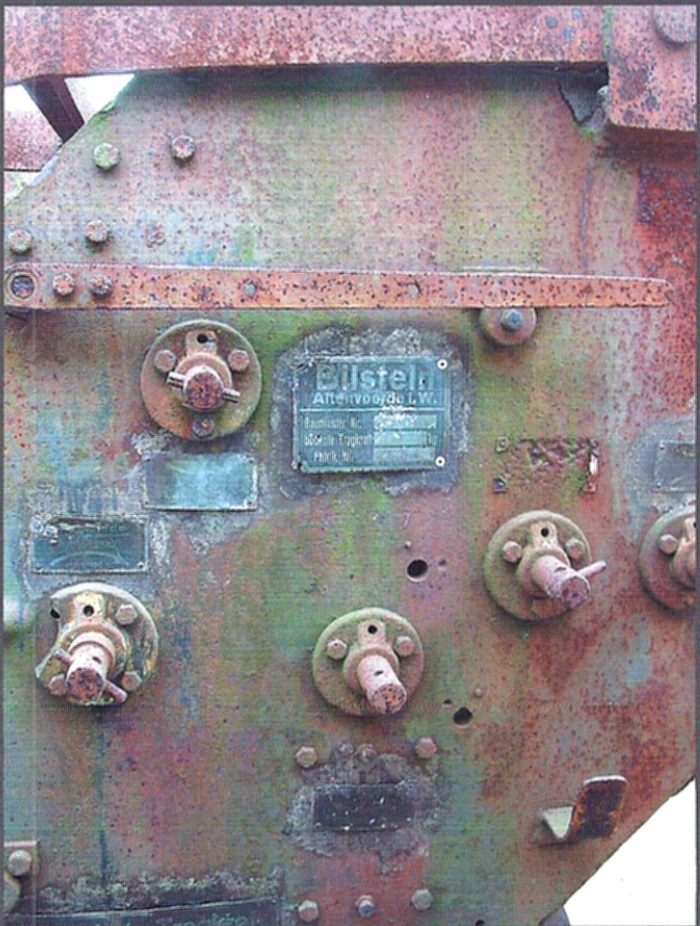
parts are sensibly thought out & my mouldings were perfect. No bubbles or distortion at all. the crane body is, again, a one-piece, hollow moulding, comprising of the base & three-sided super structure, all faces are finely detailed. Apart from the wire drums themselves, no detail is provided for the internals, but once the canvas flaps are in place, you wouldn't see it anyway. All the exterior details are nicely represented, and the peices fit together very well. The only other part that is obviously missing, is the large, two-part dust cover, that sits around the base of the crane housing, to protect the rotating gear underneath. Although the exposed detail is beautifully done, I have yet to see a picture of a crane operating without this in place. Although these parts would be fairly straight-forward to scratchbuild & the instructions do point out their ommision from the kit, I think it is a fairly important part of the vehicle &, as such, it would have been nice to have had it included.

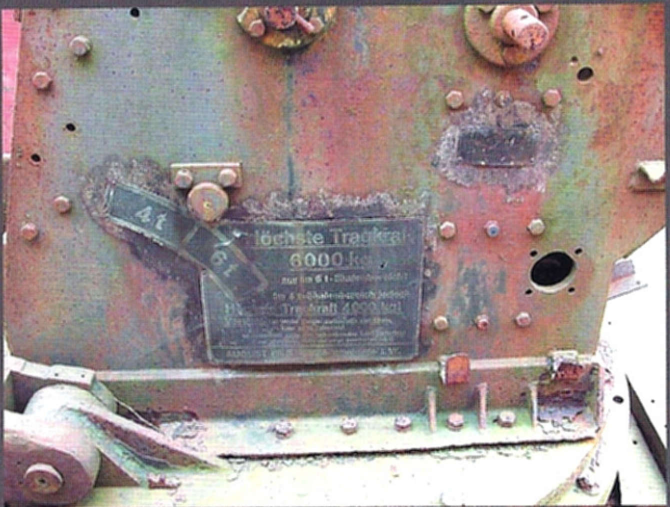
The crane's boom is made up from both resin parts & brass tubing, The brass tubes telescope nicely & have already been pre-drilled to accept the adjustement pins, a nice touch this, as not all modellers would have the necassary equipment to deal with it. The inner tube is rather long however, not a problem if being used at full extension, but if stowed, or only partially extended, it needs to slide further down than it's length will allow. The two assemblies on the ends of the tubes lie butting up to one-another, when the boom is fully retracted, so this should give you some idea of how much needs to be removed. Unfortunately, whilst building the crane, I managed to lose a couple of peices, so had to replicate them with plastic card.

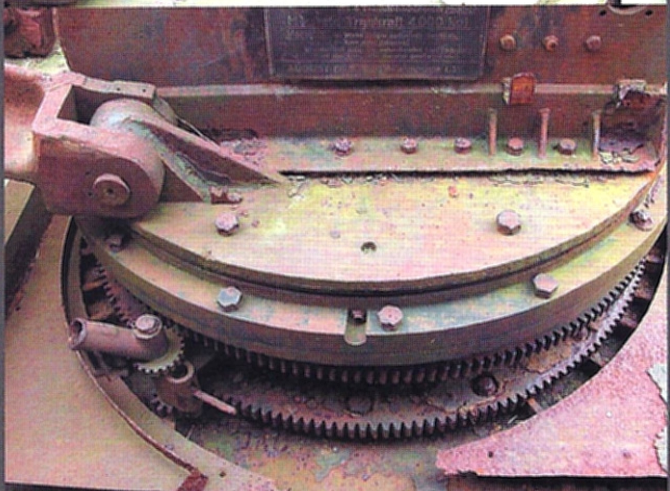
The final thing for me to do was go back & add the stabilising legs. I decided to show these being used, so followed the instructions accordingly. The legs on the real vehicle show a pair of metal retaining bars linking each leg to the track links, to prevent them from spreading when a load is placed upon them. These bars aren't included in the kit, so I made mine from some copper wire, however, it was while test-fitting these bars, that I hit a small

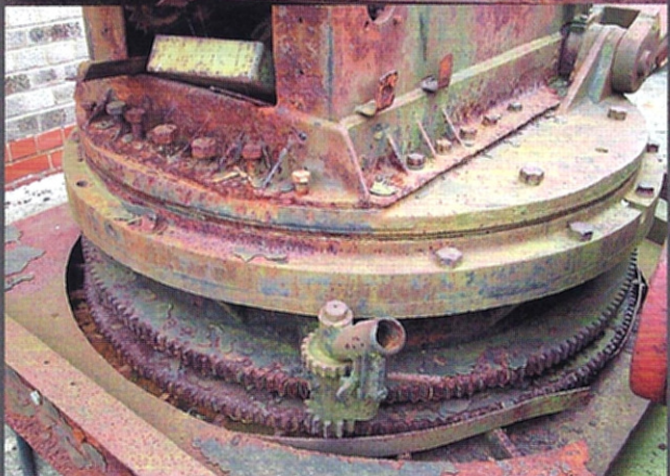


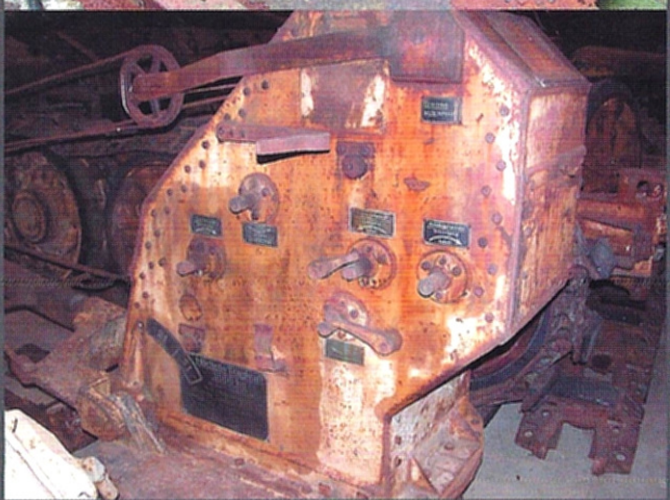
The real Bilstein crane in 3 ton and 6 ton versions which are both part of Kevin Wheatcroft's collection. The 3 ton stored indoors is the more complete with all the information panels in place and the paint still visible. The vehicle behind it is a shortened Famo chassis.

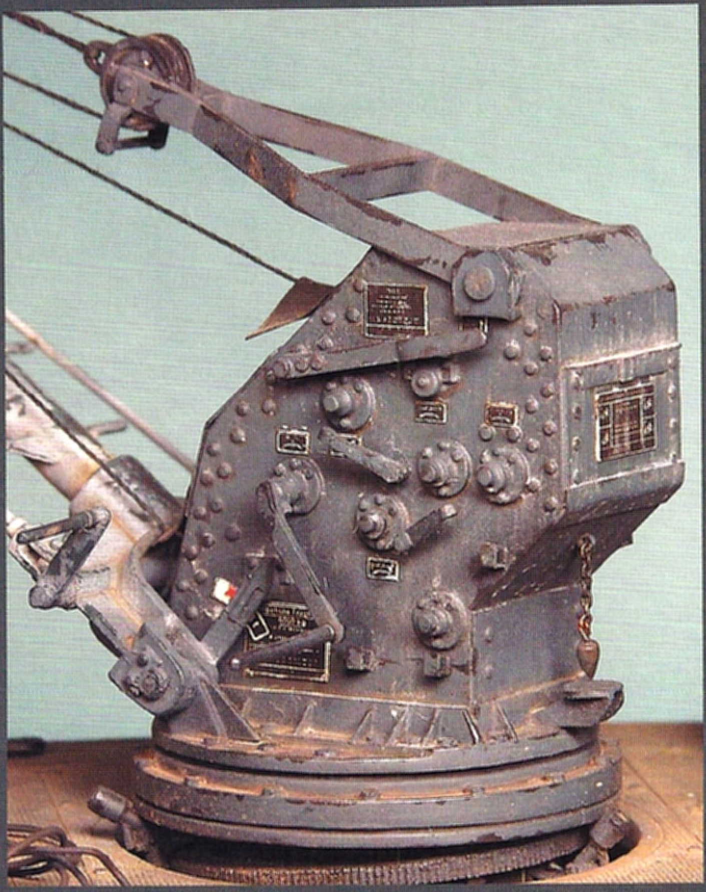

Bilstein
Altenvoorde i.W.


4t
6t
Höchste Tragkraft
6000 kg
Tragkraft 4000 kg



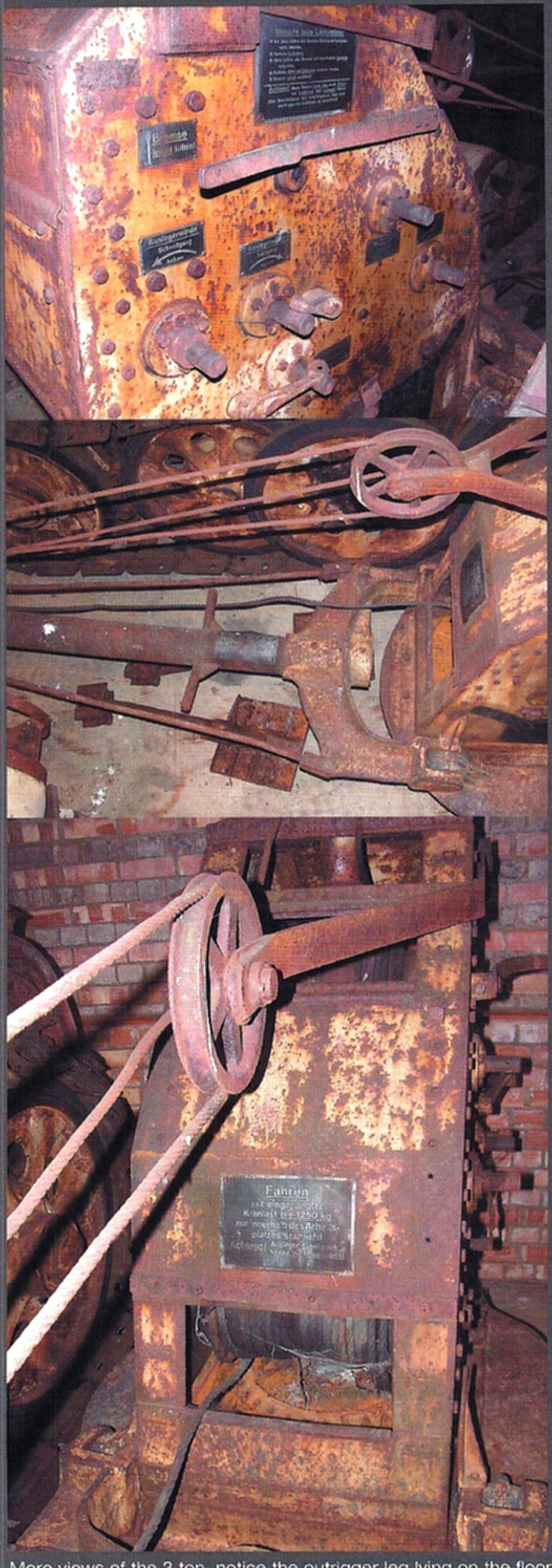




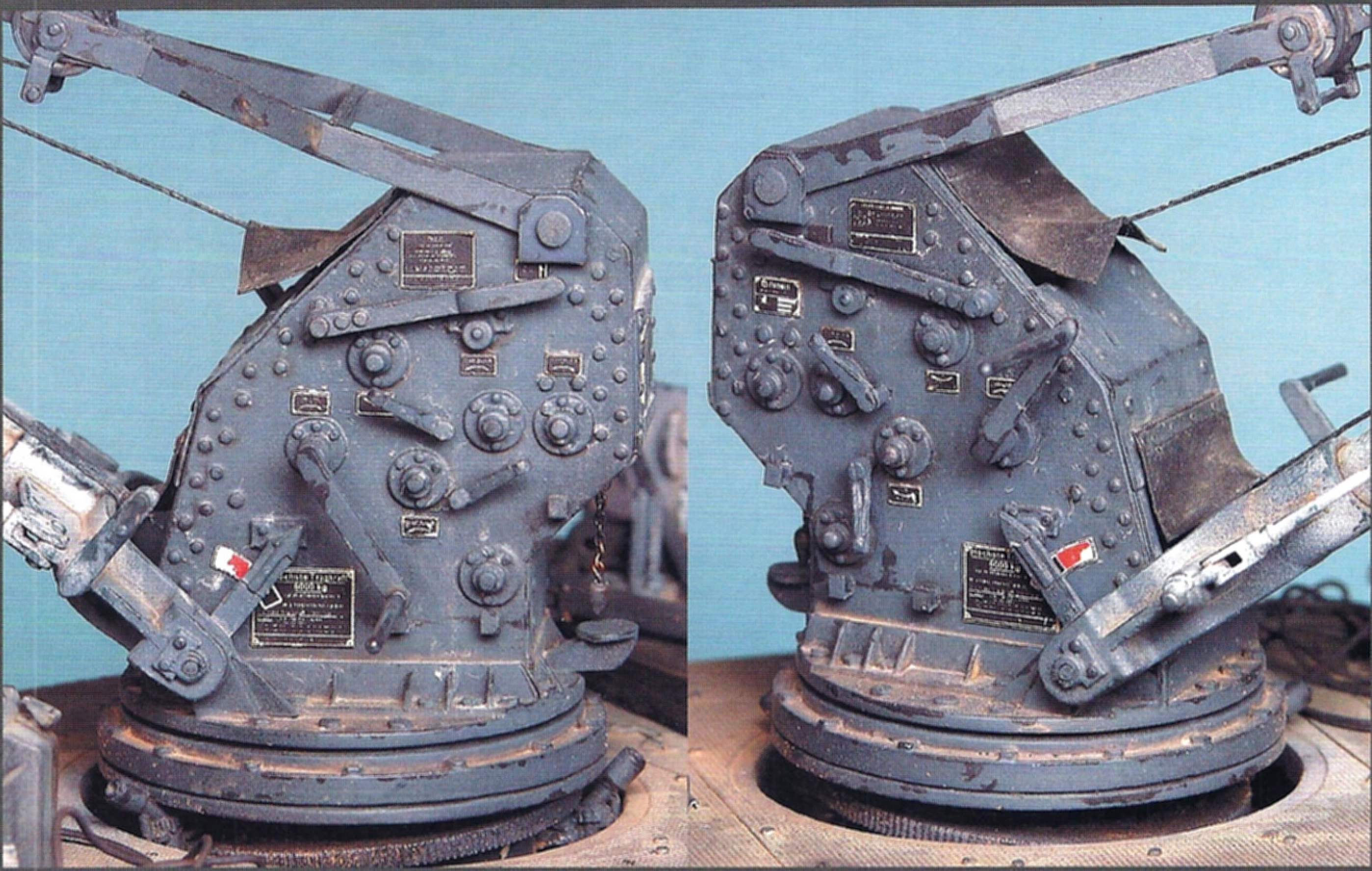


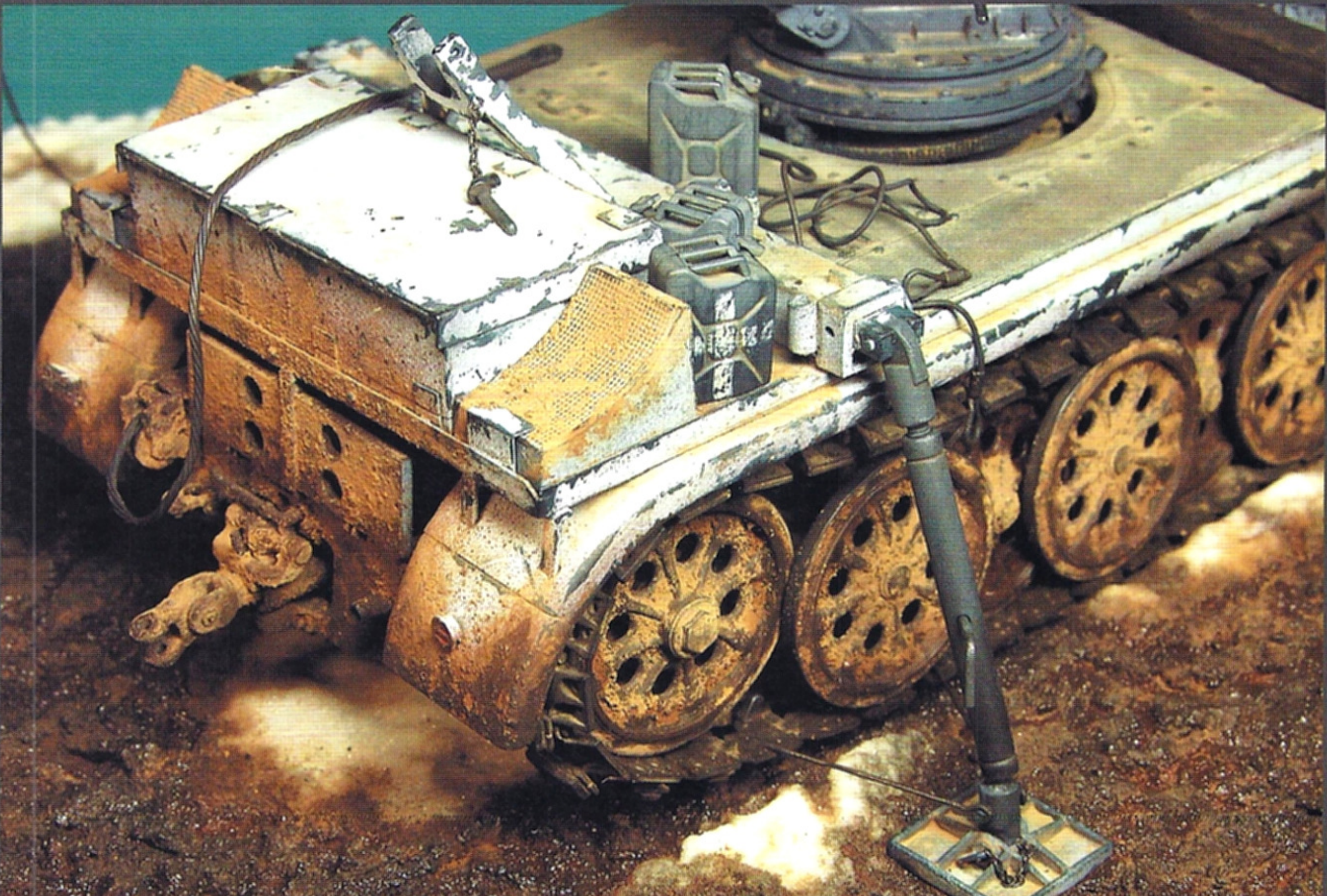
problem. The rear legs are directly in line with the last roadwheel, preventing the bars from slotting into the holes in the track links. When I looked at my references, the rear leg position appears to be slightly behind the last roadwheel, I say appears because looking at a photo that isn't exactly square-on can be quite decieving, but in any case, the problem seems to be that the new kit deck finishes just short of where it should do, i.e. flush with the rear fenders, so the rear toolbox & crossbeam are slighly too far forward. To be honest, if I hadn't fitted the outrigger legs, I may well have missed this. Although it isn't a huge problem & certainly doesn't spoil the look of the vehicle in any way, it's probably something I would try to correct if I built this kit again.
The final part of the assembly involves rigging the crane, a clear set of schematic drawings is provided, but I left this until after the model was painted.

Painting began with a coat of matt black auto primer, this shrinks as it dries, forming a good key for the next layers & also providing a post-shading effect. The grey was mixed from Tamiya acrylics, as was the white overspray. This was heavily thinned & sprayed in almost transparent layers, until I had the effect I was after. I took care to avoid spraying any parts white, that would have had their canvas covers in place. The grey paint was then used again over the top, to represent the damaged whitewash. a fine paint brush was used for the chipping & the drybrushing method, for the worn off areas. At this point I added the decals. The decal sheet provides the instruction plaques for the operation of the crane & all of them are to be applied to the main crane housing.



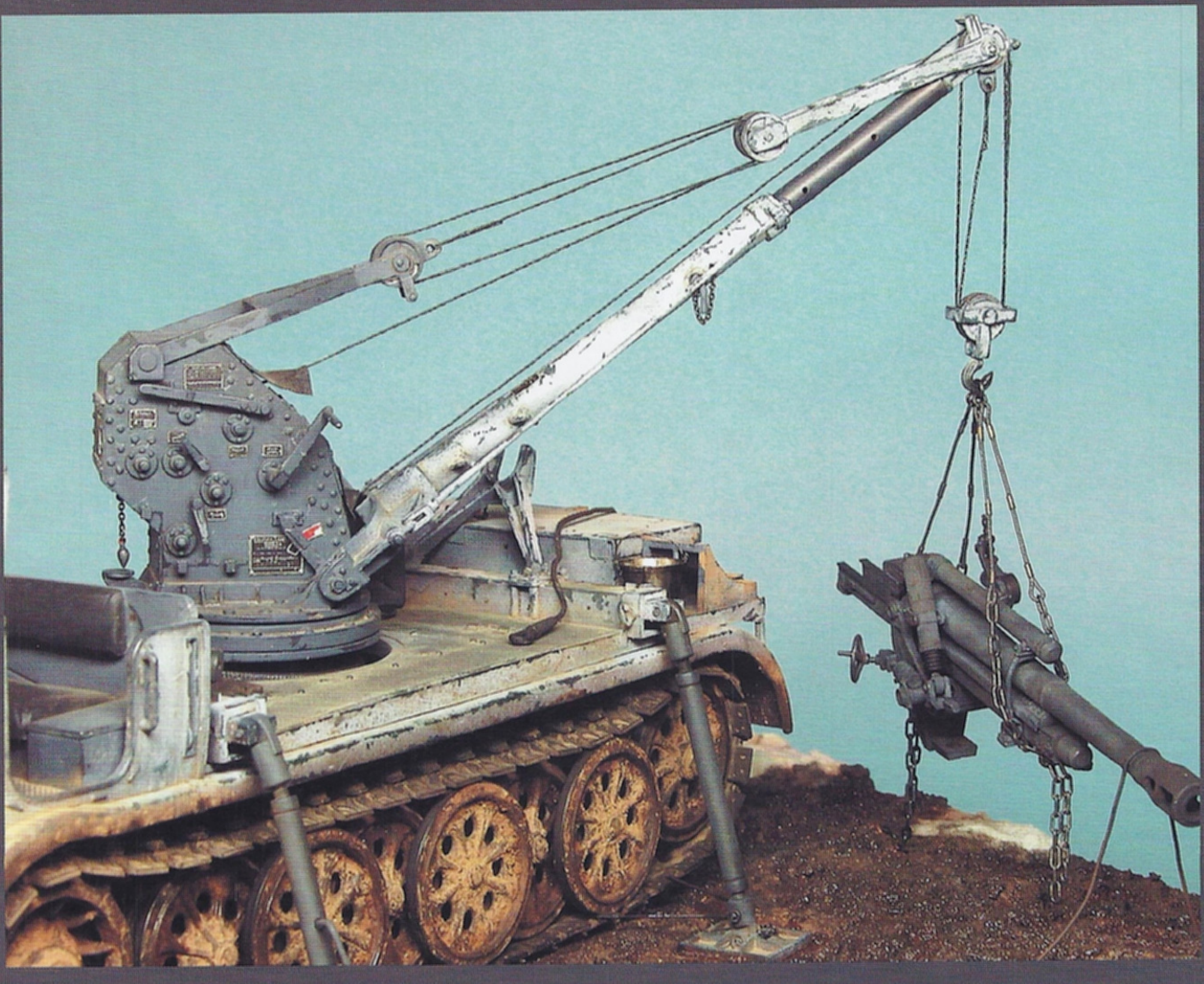
More views of the 3 ton, notice the outrigger leg lying on the floor under the boom.

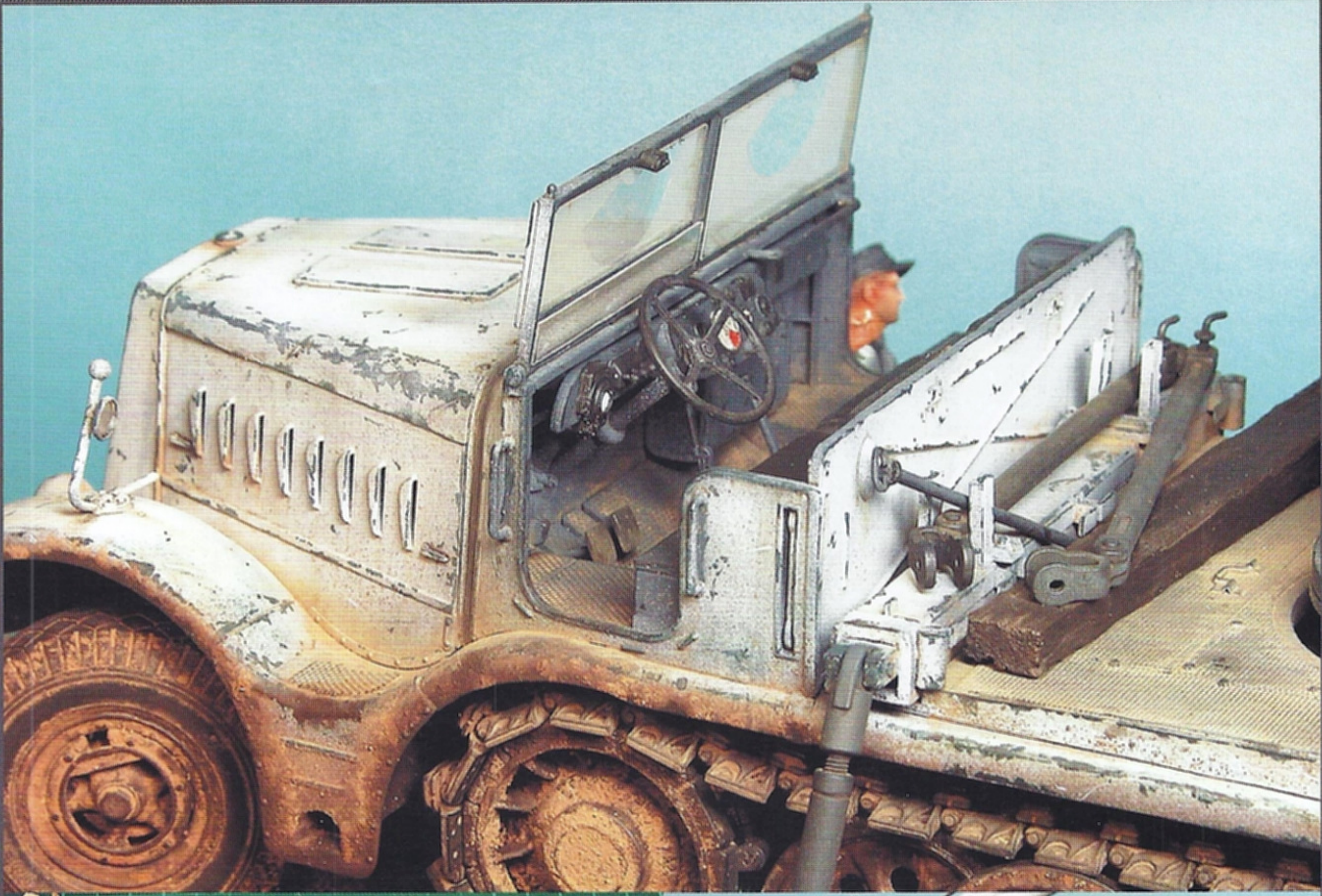


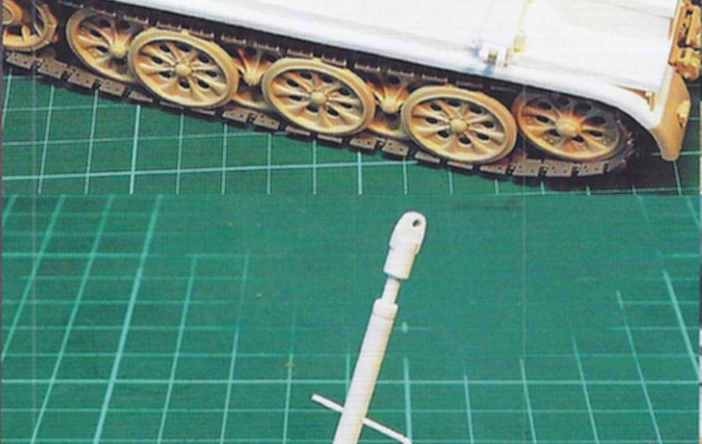


The decals look to be clearly printed in black, white & red, but on applying the first decal, I discovered that the white was in fact the backing paper showing through a clear decal & when applied to my dark grey paintwork, the black text disappeared! Fortunately I had only immersed the one decal into the water, my way around this was to cut the decals into individual plaques, leaving the backing paper in place. These were then glued to the crane body with PVA glue. To be honest, this probably represents the panels as effectively, if not more -so, as the real ones are printed onto raised metal plates. Continuing with the weathering, raised detail was emphasised with some localised oil washes, raw umber & burnt sienna were used for this, then to represent the accumulated dust, around the rear deck & cabin, some Tamiya buff, heavily thinned with water, was allowed to flow into all the corners & crevices. The final thing I added, was some ground up pencil graphite, applied with a finger-tip to any high wear areas, I find this more subtle than drybrushing with metallic paint, which, if not careful, can appear a bit too bright.

Once the vehicle had been painted, I decided a scenic base would set it off nicely. The groundwork is made from a papier-mache material, called 'clay-Crete', topped with white glue & very fine sand, the vehicle, figure & footprints were pressed in while still wet. Once the groundwork had been painted with a suitably muddy base colour, I used 'MIG' pigments quite liberally over the top. Several colours were mixed together & also used individually, to give the shade variations, fixing them with white spirit. The areas to be covered with snow were then airbrushed on with white paint & my snow 'paste' was spread on top of this. The paste was made by mixing acrylic gel medium with very fine glass powder, normally used for shot-blasting, it was worked with a wet brush until I was happy with the texture & then left to set, which it did, like rock! After adding the figure, a wolf model with a Royal Model head, all that remained was for me to use the same pigments from the groundwork, to tie the items together & represent the dried mud & earth carried onto the vehicle on the soldier's boots. On the ground, I added small pools of gloss varnish to the bottom of every track & footprint. The model was finished with some peices of stowage & a gun, taken from Tamiya's 'Wespe' kit. The gun crradle & tow hawsers were made from lead wire, brass tube & some cheap







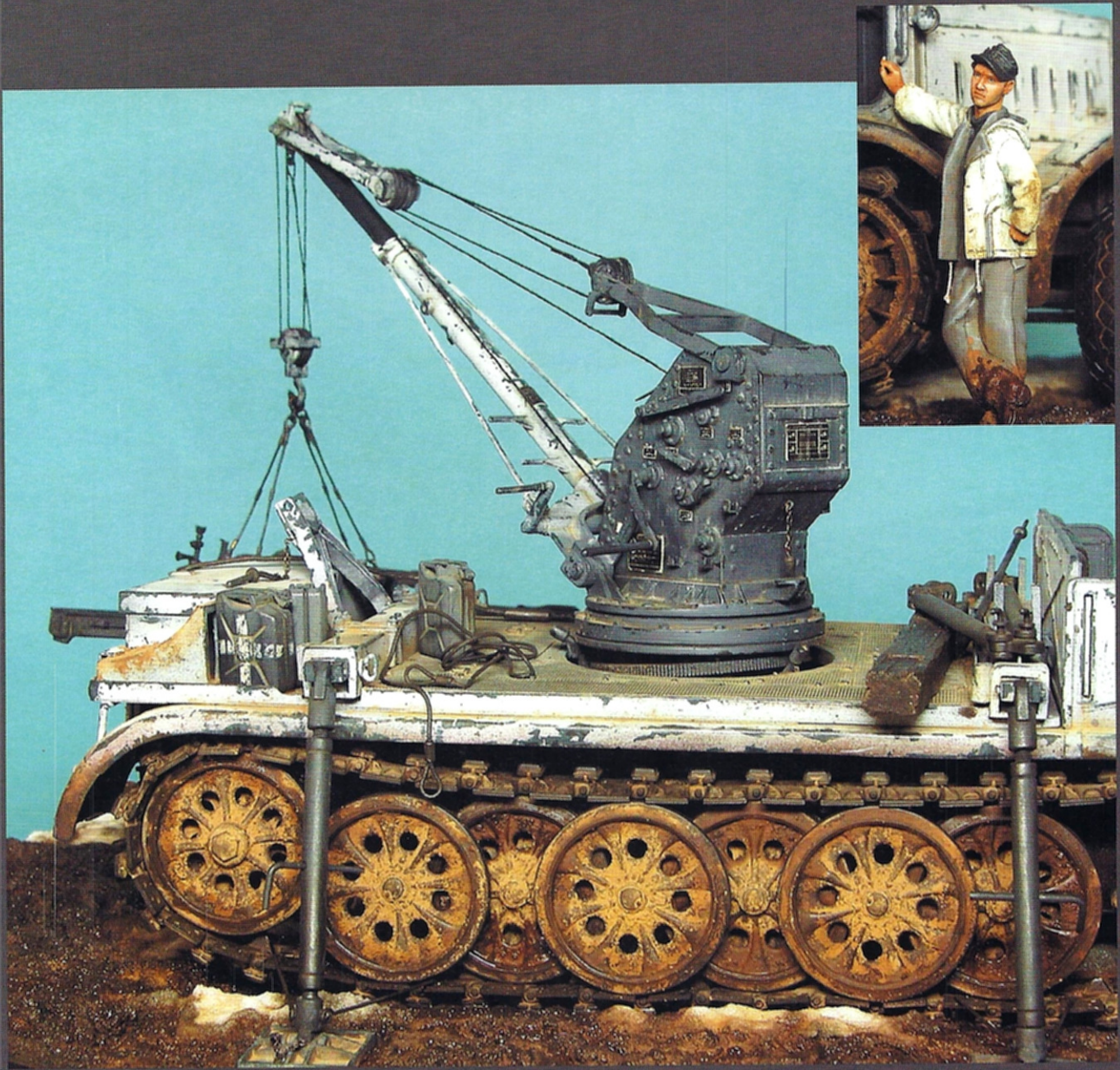
jewelry chain, the vehicles tow cable is brass picture hanging wire.

As this was to be a review of the kit, I decided not to add any of my usual aftermarket items, so, with the exception of the metal retaining bars, used to tether the outrigger legs, & the stowage items already mentioned above, the model was built entirely from the contents of the Tamiya & TMD boxes. As with any kit, there are a some places that could be improved, but these places are few. If you chose to throw any of the already available update sets for the Famo in to the mix as well, you would have the makings of a truly impressive model. With the excellent instructions, well moulded resin parts & everything else you need, already in the box, this kit can only come highly recommended. With a little previous experience in cleaning up resin parts & working with the different adhesives, most modellers would find this a joy to build & with their choice of such an attractive vehicle, I'm sureTiger Model Designs are on to a sure-fire winner.

The referances used throughout were 'Nuts & Bolts' vol .12 & 'The Military machine', by Stefan Konig, both books dedicated to the Famo & both highly recommended, whichever version of the Famo you are modelling.

As I mentioned earlier, the TMD instructions state that no pictures exist of the 9/1's legs being used in the field &, from what I've read on the internet & elsewhere, this seems to be fairly well accepted. However, for those of you that have the Schiffer book on the 1st Panzer Division, the evidence to the contrary can be found on pg135. The picture shows a 9/1 Famo, rear legs deployed, lifting the front end of another Famo, this time a late version.

My Thanks to Dave & Don, for supplying me with the TMD kit & to Jon Bailey, for bringing the 1st Panzer Picture to my attention.



BLAST Models

AFV modeller

BL35040K Modern Diorama Accessories £16.00 + P&P

BL35037K M4A3 Sherman Update set for Tamiya 35120/35250/35251 £20.75 + P&P

BL35038K M4 Sherman Update set for Tamiya Early Stowage £9.50 + P&P

BL35043K Soviet T34/85 Stowage £9.50 + P&P

BL35039F Modern French Tank Crewman £9.00 + P&P

German Secret Weapons

BL35041K Kubelwagen with Infra Red device £15.50 + P&P

BL35029K M3A3 Stuart stowage to fit AFV Club kit £11.00 + P&P

BL35036K T55 update set £20.00 + P&P

BL35024K M4 Sherman stowage set £8.00 + P&P

BL35035K Borgward Wanze conversion kit for Dragon/Revell kit £20.00 + P&P

BL35026K
M24 Chaffee
stowage set
£11.00 + P&P

BL35023K Bradley running gear and Tracks £22.50 + P&P

BL35018F IDF Tank/APC crew £16.50 + P&P

BL35027K Humvee wheels £7.50 + P&P

BL35030K Asymmetrical turret for Tiger1 production batch March-June 1944 £19.00 + P&P

BL35033K Jeep Tilt for Tamiya kit £10.00 + P&P

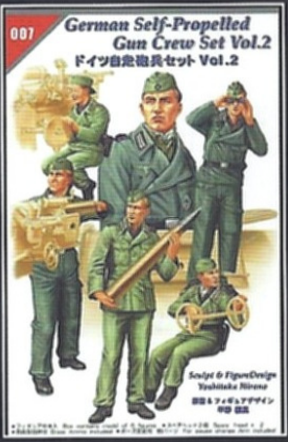
Tristar

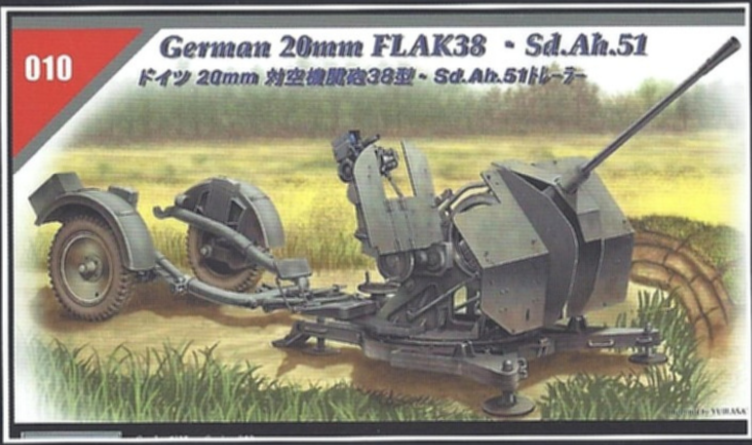
NEW

20mm Flak 38 with Sd.Ah.51

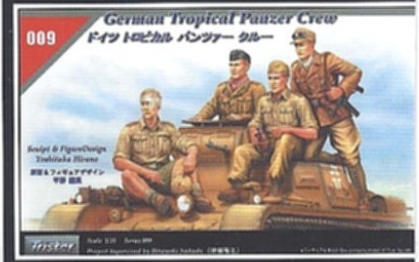
Series 010 Due soon price to be confirmed

007 German SPG Crew 2 £10.00

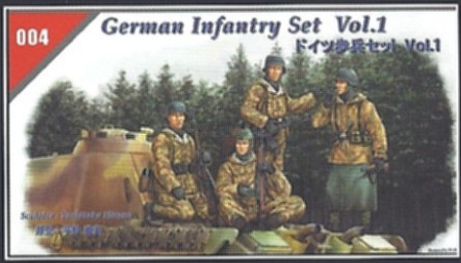

007
German Self-Propelled Gun Crew Set Vol.2
ドイツ自走砲兵セット Vol.2
Sculpt & FigureDesign Yoshitaka Hirono


010
German 20mm FLAK38 - Sd.Ah.51
ドイツ 20mm 対空機関砲38型 - Sd.Ah.51トレーラー

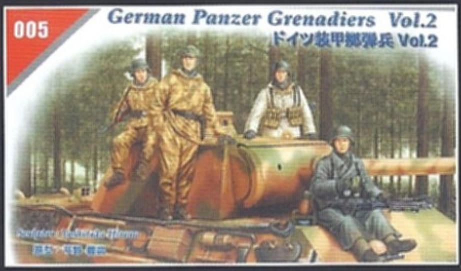
009 German Tropical Panzer Crew £7.50


009
German Tropical Panzer Crew
ドイツ トロピカル パンツァー クルー
Tristar

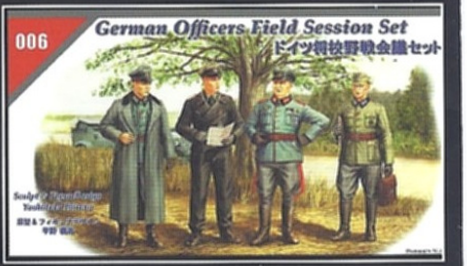
004 German Pz Grenadiers 1 £7.50


004
German Infantry Set Vol.1
ドイツ歩兵セット Vol.1

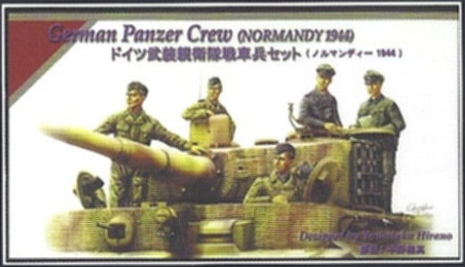
005 German Pz Grenadiers 2 £7.50


005
German Panzer Grenadiers Vol.2
ドイツ装甲擲弾兵 Vol.2

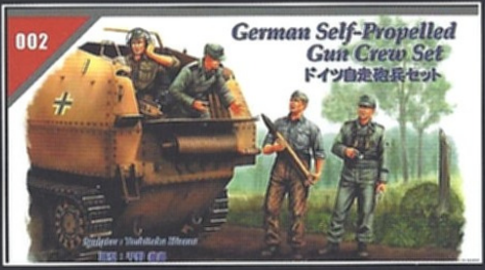
006 German Officers £7.50


006
German Officers Field Session Set
ドイツ将校野戦会議セット

001 German Panzer Crew £7.50

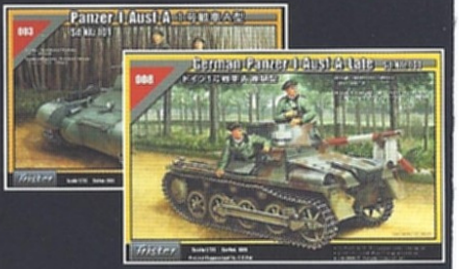

German Panzer Crew (NORMANDY 1944)
ドイツ武装親衛隊戦車兵セット（ノルマンディー 1944）

002 German SPG Crew £7.50


002
German Self-Propelled Gun Crew Set
ドイツ自走砲兵セット

003 SdKfz 101 Panzer 1a £28.00

008 SdKfz 101 Panzer 1a Late £28.0


003
Panzer I Ausf. A
008
German Panzer I Ausf. A Late
Tristar

Prices exclude Postage & packing
Figures £1.50 UK, £2.00 Western Europe
Pz1a £2.00 UK, £2.50 Western Europe

Please send me set

001 ☐ Quantity ☐ at £7.50 each
002 ☐ Quantity ☐ at £7.50 each
003 ☐ Quantity ☐ at £28.00 each
004 ☐ Quantity ☐ at £7.50 each
005 ☐ Quantity ☐ at £7.50 each
006 ☐ Quantity ☐ at £7.50 each
007 ☐ Quantity ☐ at £10.00 each
008 ☐ Quantity ☐ at £28.00 each
009 ☐ Quantity ☐ at £7.50 each

Available from AFV modeller

I enclose a cheque for £ ☐ made payable to AFV Modeller (UK Customers only)

Cardholder's name ☐

Card No. ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐

Expiry date ☐☐ ☐☐ ○Visa ○Mastercard ○Eurocard ○Visa Debit ○Switch ☐☐ Issue No.

Your details BLOCK CAPITALS PLEASE

Title .... First Name ....

Surname ....

Address ....

....

....

Post/zip code .... Country ....

€ 12.00

Please return your completed coupon to: AFV Modeller, 176 New Bridge Street, Newcastle upon Tyne, England NE1 2TE